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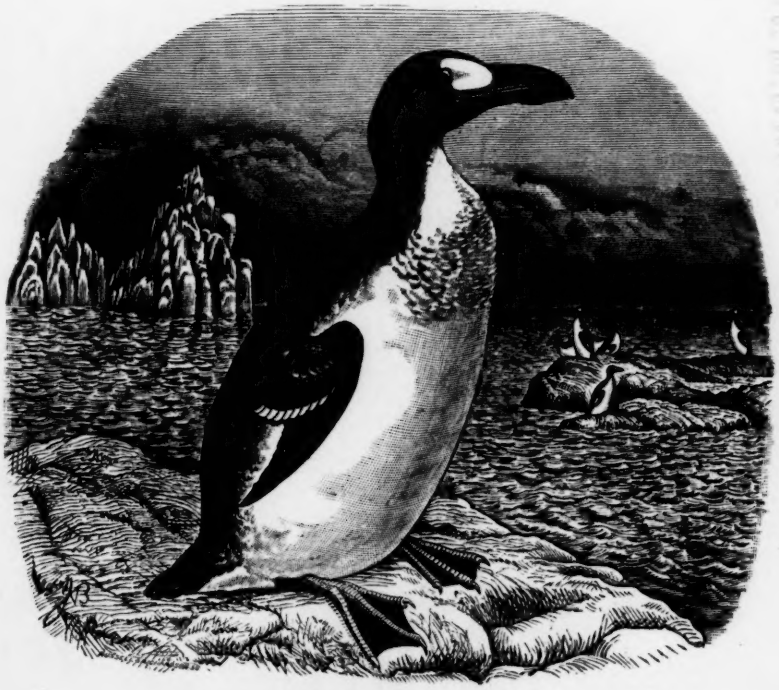

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ADAMS, STEPHEN J., Cornish, Me.....1892
ADNEY, E. T., 189 West 136th St., New York City.....1885
ALLEN, CHARLES ANDREW, Nicasio, Marin Co., Cala.....1894
ALLEN, FRANCIS H., West Roxbury, Mass.....1888
ALLEN, WILLIAM G., 1 Edward St., Worcester, Mass.....1893
ANTHONY, A. W., 2042 Albatross St., San Diego, Cala.....1885
ARCHER, W. C., 252 7th St., Jersey City, N. J.....1888
ARNOLD, EDWARD, 126 Van Buren St., Battle Creek, Mich.....1894
ATHERTON, FRANK IRVING, P. O. Box 60, Los Gatos, Cala.....1894
ATKINS, JOHN W., Key West, Florida.....1887
ATTWATER, H. P., San Antonio, Texas.....1891
AVERILL, C. K., Jr., Bridgeport, Conn.....1885
AYER, ED. E., 1 Bank St., Chicago Ill.....1889
BABBITT, JAMES P., Taunton, Mass.....1891
BACON, CARRINGTON C., Imboden, Arkansas.....1890
BACON, SAMUEL E., Jr., 2d National Bank, Erie, Pa.....1891
BAGG, EGBERT, 191 Genesee St., Utica, N. Y.....1883
BALL, CARLETON R., Little Rock, Iowa.....1891
BALL, Miss HELEN A., Worcester, Mass.....1893
BAILEY, VERNON, Elk River, Minn.....1887
BAILY, CHARLES E., Malden, Mass.....1890
BAILY, WILLIAM L., 138 South 4th St., Philadelphia, Pa.....1885
BAKER, CARL F., Fort Collins, Colo.....1893
BAKER, FRANK COLLINS, Acad. Sci., Lincoln Park, Chicago, Ill.....1894
BANGS, EDWARD APPLETON, 31 Pemberton Sq., Boston, Mass.....1884
BANGS, OUTRAM, 31 Pemberton Sq., Boston, Mass.....1884
BANKS, J. W., St. John, N. B.....1887
BARBOUR, Prof. ERWIN H., Univ. of Neb., Lincoln, Nebraska.....1892
BARLOW, CHESTER, Santa Clara, Cala.....1894
BARNARD, JOB, 500 5th St., N. W., Washington, D. C.....1886
BARNES, Hon. R. M., Lacon, Ill.....1889
BARNEY, EVERETT H., Springfield, Mass.....1891
BASKETT, J. N., Mexico, Mo.....1892
BATES, ABBY FRANCES CALDWELL, Waterville, Maine.....1894
BAUR, Dr. G., Univ. of Chicago, Chicago, Ill.....1892
BAXTER, GEORGE STRONG, Jr., 109 E. 17th St., New York City.....1894
BEAL, F. E. L., 1513 Kingman Place, Washington, D. C.....1887
BEAN, J. BELLFIELD, Nicollet, Minn.....1892
BEARD, DANIEL C., 110 Fifth Ave., New York City.....1887
BECK, ROLLO HOWARD, Berryessa, Santa Clara Co., Cala.....1894
BEHR, EDWARD A., 428 Henry St., Brooklyn, N. Y.....1892
BELL, JAMES P. H., Gainesville, Fla.....1889
BELLOWS, ED. D., 215½ 4th St., Jersey City, N. J.....1889

BENNER, FRANKLIN, 110 2d St., N. Minneapolis, Minn.....1883
BENNERS, GEO. B., 122 Walnut St., Philadelphia, Pa.....1889
BENT, ARTHUR CLEVELAND, Plymouth, Mass.....1889
BENTON, Lieut. H. C., U. S. A., The Presidio, San Francisco, Cala..1886
BERGTOLD, Dr. W. H., 3213 Champa St., Denver, Colo.....1889
BERIER, DELAGNEL, Ridgewood, N. J.....1885
BILL, CHARLES, Springfield, Mass.....1889
BISHOP, Dr. LOUIS B., 77 Whitney Ave, New Haven, Conn.....1885
BOARDMAN, GEORGE A., Calais, Maine.....1883
BOIES, A. H., Hudson, Mich.....1890
BOND, FRANK, Cheyenne, Wyoming..... 1887
BOND, HARRY L., Sioux City, Iowa.....1890
BOWDISH, B. S., Tallapoosa, Ga.....1890
BOWERS, LIONEL F., Columbia, Lancaster Co., Pa.....1894
BOWLES, J. H., Ponkapog, Mass.....1891
BRADFORD, L. M. B., Providence, R. I.....1889
BRANDRETH, FRANKLIN, Sing Sing, N. Y.....1889
BRETHERTON, BERNARD J., Newport, Lincoln Co., Oregon.....1893
BREWSTER, E. E., Iron Mountain, Mich.....1893
BRIMLEY, CLEMENT S., Raleigh, N. C.....1888
BROCK, HENRY HERBERT, M. D., Portland, Me.....1894
BROCKUNIER, SAMUEL H., Wheeling, West Virginia.....1889
BROKAW, L. W., St. Joseph, Ill.....1893
BROOKS, EARLE A., Morgantown, Upshur Co., W. Va.....1892
BROWN, A. D., Pipestone, Minn.....1891
BROWN, EDWARD J., 820 20th St. N. W., Washington, D. C.....1891
BROWN, HERBERT, Tucson, Arizona.....1885
BROWN, HUBERT H., 22 Collier St., Toronto, Ontario.....1889
BROWN, JOHN CLIFFORD, Portland, Me.....1888
BROWN, WILMOT W., Jr., West Somerville, Mass.....1892
BROWNE, FRANCIS CHARLES, Framingham, Mass.....1883
BRUCE, MARY EMILY, Easthampton, Mass.....1894
BRYANT, JOHN A., 1221 Olive St., Kansas City, Mo.....1893
BRYANT, DR. WM. SAWYER, Cohasset, Mass.....1893
BUHLER, ULYSSE, 129 E. 76th St., New York City.....1894
BULLEY, REGINALD H., Canton, Ohio.....1889
BURNS, FRANK L., Berwyn, Chester Co., Pa.....1891
BURTON, H. C., 228 South St., New York City.....1893
BUTLER, AMOS W., Brookville, Ind.....1885
CAIRNS, JOHN S., Weaverville, N. C.....1889
CALL, AUBREY BRENDON, Townshend, Vt.....1894
CAMPBELL, HARVEY C., Lansingburg, Rens. Co., N. Y.....1890
CAMPBELL, ROBERT ARGYLL, Boulder, Colo.....1894
CANFIELD, J. B., 329 Iraniston Ave., Bridgeport, Conn.....1893
CARPENTER, CHARLES KNAPP, Ann Arbor, Mich.....1894
CARRUTH, CHARLES THEODORE, 4 Fayerweather St., Cambridge, Mass.....1891

CARY, CLINTON DE LA MONTAIGNE, 181 W. 135th St., New York City.....1894
CASE, CLIFFORD M., 54 Babcock St., Hartford, Conn.....1892
CASE, RALPH ERNEST, Avon, Conn.....1894
CAULK, WM. B., Terre Haute, Ind.....1891
CHAMBERLAIN, C. W., 51 Lincoln St., Boston, Mass.....1885
CHAMBERLAIN, ERNEST, Jubilee, Peoria Co., Ill.....1893
CHASE, VIRGINIUS H., Wady Petra, Ill.....1892
CHERRIE, GEORGE K., Field Columbian Museum, Chicago, Ill.....1891
CHUBB, SAMUEL H., 110 W. 124th St., New York City.....1894
CLARK, HUBERT LYMAN, 906 McCulloh St., Baltimore, Md.....1886
CLARK, JOHN N., Saybrook, Conn.....1885
CLARKE, Prof. S. F., Williamstown, Mass.....1890
COALE, H. K., 136 Washington St., Chicago, Ill.....1883
COBB, Miss JULIAETTE J., West Brookfield, Mass.....1892
COLBURN, ALBERT E., 700 Fourth St., N. E., Washington, D. C...1891
COLBURN, W. W., Springfield, Mass.....1889
COLT, WILLIAM C., 59 Pleasant St., Worcester, Mass.....1892
COMEAU, NAPOLEON A., Godbout, P. Q.....1885
CONDIT, DAYTON LORD, St. Anthony Park, Minn.....1894
CONGDON, HERBERT WHEATON, West New Brighton, N. Y.....1893
CONKLIN, CHARLES E., Roslyn, N. Y.....1892
CONKLIN, Dr. WILLIAM A., 10th Ave. cor. 187th St., New York City.1885
COOK, ALBERT JOHN, Claremont, Cala.....1894
COPE, ALBAN, Hartford, Conn.....1885
COPE, FRANCIS R., Jr., Philadelphia, Pa.....1892
CORBETT, HERBERT EDWIN, Pipestone, Minn.....1894
COUES, ELLIOTT BAIRD, Bellevue Med. Coll., New York City.....1886
COUES, WILLIAM PEARCE, Mass. Gen. Hospital, Boston, Mass.....1888
CRAM, R. J., 26 Hancock Ave., W., Detroit, Mich.....1893
CRAMPTON, H. E., Jr., 256 W. 121st St., New York City.....1891
CRANDALL, C. W., Woodside, Queen's Co., N. Y.....1891
CRONE, JOHN V., Marathon, Iowa.....1893
CULYER, Col. JOHN Y., Room 150, Potter Building, New York City.1890
CURRIER, EDMONDE SAMUEL, Keokuk, Iowa.....1894
DAENZER, CARL, St. Louis, Mo.....1888
DAFFIN, W. H., 5000 Franklin St., Philadelphia, Pa.....1892
DAGGETT, FRANK S., Duluth, Minn.....1889
DANA, J. LE ROY, Blackhawk, Colo.....1889
DAVIS, DENNIS BARNES, 816 Colfax St., Toledo, Ohio.....1894
DAVIS, GEORGE A., Mexico, N. Y.....1890
DAVIS, NATHAN L., Brockport, N. Y.....1893
DAVISON, J. L., Lockport, Niagara Co., N. Y.....1885
DEAN, R. H., Tennallytown, Washington, D. C.....1893
DE HAVEN, ISAAC NORRIS, Ardmore, Pa.....1893
DELAFIELD, JOSEPH L., 475 Fifth Ave., New York City.....1888
DENNE, DAVID, 100 St. Francis Xavier St., Montreal, Can.....1890

DETWILLER, Dr. JNO. W., Bethlehem, Pa.....1891
DEWEY, Miss MARGARET, 168 Pearl St., Springfield, Mass.....1892
DICKINSON, EDWIN, Springfield, Mass.....1885
DICKINSON, JOSEPH A., Gresham, Nebr.....1894
DICKINSON, JOSEPH EDWARD, Rockford, Ill.....1894
DICKINSON, W. S., Tarpon Springs, Fla.....1891
DILLE, FREDERIC M , 611 McPhee Bldg., Denver, Colo.....1892
DIONNE, C. E., Laval Univ., Quebec, Can. 1893
DIXON, FREDERIC J., Hackensack, N. J. 1891
DOERTENBACH, WILLIAM FAUTZ, 226 Main St., Pueblo, Colo.....1894
DOUGHERTY, Capt. W. E., U. S. A., Hoopa Valley, Cala.....1890
DOUGLASS, BERT H., Burlington, Kansas 1890
DRAKE, LEWIS MARVIN, Blissfield, Mich.....1894
DUNBAR, W. LINFRED, 53 College House, Cambridge, Mass.....1892
DURFEE, OWEN, Fall River, Mass.....1887
DUTCHER, B. H., 525 Manhattan Ave., New York City..... 1886
DYCHE, Prof. L. L., Lawrence, Kansas..... 1886
EAMES, Dr. EDWIN H., Bridgeport, Conn. 1888
EASTMAN, HARRY D., Framingham, Mass. 1891
EATON, ALVAH A., Seabrook, N. H.....1890
EDDY, NEWELL A., 615 North Grant St., Bay City, Michigan.....1885
EDGAR, NEWBOLD, 28 E. 39th St., New York City 1891
EDSON, JOHN M., New Whatcom, Washington.....1886
EDWARDS, WILLIAM SEYMOUR, Charleston, W. Va.....1894
ELDON, CHARLES H., Williamsport, Pa.....1891
ELROD, Prof. M. J., Illinois Wesleyan Univ., Bloomington, Ill.....1892
ERWIN, GORDON W., Y. M. C. A., Sedalia, Mo.....1892
EVANS, EVAN M., Englewood, N. J.....1888
EVERMANN, Prof. BARTON W., U. S. Fish Comm., Washington, D. C. 1883
FAIRBANKS, Hon. FRANKLIN, St. Johnsbury, Vt.....1885
FANNIN, JOHN, Provincial Museum, Victoria, B. C.....1888
FARLEY, JOHN A., Newton, Mass.....1892
FAXON, Dr. WALTER, Mus. Comp. Zoöl., Cambridge, Mass.....1891
FERGUSON, CHAUNCY COFFIN, Pittsfield, Maine.....1894
FERNALD, ROBERT HEYWOOD, 121 Streator Ave., Cleveland, Ohio...1890
FERRY, JOHN FARWELL, Lake Forrest, Lake Co., Ill 1894
FIGGINS, JESSE DADE, Kensington, Md.....1889
FISHER, WILLARD J., Medway, Mass.....1892
FISHER, WILLIAM HUBBELL, 12 Wiggins Block, Cincinnati, Ohio....1883
FLANDERS, JAMES WALTER, Wilmot Flat, N. H.....1894
FLEMING, JAMES H., Toronto, Can.....1893
FLINT, HARRY W., Yale National Bank, New Haven, Conn.....1888
FLINT, WILLIAM R., Oakland, Cala.....1890
FLOOD, OLIVER D., Malden, Mass.....1893
FLOYD, HARRY WEBB, 2 Verona Place, Brooklyn, N. Y.....1892
FORBUSH, EDWARD H., Malden, Mass.....1887
FOSTER, FRANCIS APTHORP, Cambridge, Mass.....1893

FOWLER, FREDERICK HALL, Fort Logan, Colo.....1892
FOWLER, Capt. J. L., 2d Cavalry U. S. A., Fort Logan, Colo.....1892
FOX, Dr. WILLIAM H., 1826 Jefferson Place, Washington, D. C.....1883
FRANCIS, NATHANIEL ATWOOD, Brookline, Mass.....1893
FROST, ALBERT H., 255 W. 74th St., New York City.....1893
FUERTES, LOUIS AGASSIZ, Ithaca, N. Y.....1891
FULLER, CHARLES ANTHONY, Brookline, Mass.....1894
GALE, DENIS, Gold Hill, Boulder Co., Colo.....1886
GARMAN, Prof. H., State College, Lexington, Ky.....1893
GARNIER, RALPH LEE, 8 Stocton St., Los Angeles, Cala.....1894
GAULT, BENJAMIN T., Glen Ellyn, DuPage Co., Ill.....1885
GESNER, Rev. A. H., Sing Sing, N. Y.....1885
GILBERT, Prof. CHARLES H., Leland Stanford Univ., Palo Alto, Cala.....1892
GILBERT, HAROLD L., Portland, Oregon.....1892
GLEASON, HERBERT W., 728 E. 18th St., Minneapolis, Minn.....1894
GOODALE, Dr. JOSEPH LINCOLN, 10 Craigie St., Cambridge, Mass.....1885
GOULD, JOSEPH E., Dennison, Ohio.....1889
GRANGER, WALTER W., Am. Mus. Nat. Hist., New York City.....1891
GRANT, JNO. B., The Institute, Flushing, N. Y.....1890
GREEN, MORRIS M., 706 E. Fayette St., Syracuse, N. Y.....1886
GREENE, I. C., Fitchburg, Mass.....1891
GREGG, Dr. WILLIAM H., 143 West 21st St., New York City.....1883
GRINNELL, JOSEPH, Passadena, Cala.....1894
HAHN, Rev. BENJAMIN DAVIESE, 266 Union St., Springfield, Mass.....1894
HALES, HENRY, Ridgewood, N. J.....1890
HAM, JUDSON BAXTER, Lyndon Centre, Vt.....1894
HAMFELDT, A., Ottawa, Ill.....1892
HAMLIN, GEORGE L., Bethel, Conn.....1893
HANCOCK, Dr. JOSEPH LANE, Michigan Ave., Chicago, Ill.....1894
HANMER, C. C., Burnside, Conn.....1888
HARGITT, CHARLES W., 904 E. Genesee St., Syracuse, N. Y.....1892
HARDY, MANLY, Brewer, Maine.....1883
HARRIS, WILLIAM C., Utica, N. Y.....1894
HARTE, CHARLES R., P. O. Box 136, Milford, Conn.....1890
HARTZELL, Prof. JOSEPH C., JR., Orangeburg, S. C.....1892
HASBROUCK, EDWIN M., 1448 Corcoran St., Washington, D. C.....1887
HATCH, JESSE MAURICE, Escondido, Cala.....1894
HAVEMEYER, H. O., Jr., Mahwah, N. J.....1893
HAWLEY, A. H., Vineland, N. J.....1886
HAZARD, R. G., 2d, Peace Dale, R. I.....1885
HEAPHY, Dr. LAWRENCE F., 104 E. 26th St., New York City.....1894
HECKER, FREDERICK C., Noroton, Conn.....1893
HECKER, GEORGE E., Noroton, Conn.....1893
HEDGES, CHARLES F., New Haven, Conn.....1891
HEIMSTREET, Dr. T. B., 14 Division St., Troy, N. Y.....1888
HELME, ARTHUR H., Miller's Place, Suffolk Co., N. Y.....1888
HENDRICKSON, W. F., 860 Broadway, New York City.....1885

HENNING, CARL FRITZ, Boone, Iowa....1892
HEYLER, J. C., Nauvoo, Pa....1892
HICKS, BENJAMIN D., Old Westbury, N. Y....1892
HIGGINS, HENRY C., Cincinnatus, N. Y....1892
HINE, Mrs. JANE L., Sedan, Ind....1890
HITCHCOCK, FRANK HENRY, Dept. of Agriculture, Washington, D.C. 1891
HOADLEY, Dr. FREDERIC H., Westville, Conn....1891
HOAG, BENJAMIN, Stephentown, N. Y....1892
HOFFMAN, RALPH, Belmont, Mass....1893
HOLCOMB, LEON C., 14 Howard St., Springfield, Mass....1893
HOLLISTER, NED, Delavan, Wisc....1894
HOLMES, F. H., Berryessa, Cala....1893
HOLZNER, FRANK A., San Diego, Cala....1893
HOMER, F. L., New Hamburg, Pa....1893
HOOPES, JOSIAH, West Chester, Pa....1889
HORNADAY, W. T., 53 Erie Co. B'k Bldg., Buffalo, N. Y....1888
HOUGH, ROMEYN B., Lowville, N. Y....1883
HOWELL, ARTHUR H., 459 Tompkins Ave., Brooklyn, N. Y....1889
HOYLE, CHARLES E., West Millbury, Mass....1889
HOYT, WILLIAM H., Stamford, Conn....1888
HOWE, C. P., Waukesha, Wis....1891
HUBBARD, Mrs. SARA A., 39 33rd St., Chicago, Ill....1891
HUGHES, Dr. WILLIAM E., 3726 Baring St., Philadelphia, Pa....1891
HULL, WALTER B., Box 47, Milwaukee, Wis....1889
HUNTER, Miss SUSAN MORRISON, Lakewood, N. J....1894
HURD, THEODORE D., Riverside, Cala....1890
HVOSLEF, Dr. J. C., Lanesboro, Minn....1885
HYATT, Miss MARY, Stanfordville, N. Y....1891
INGALLS, CHARLES E., East Templeton, Mass....1885
INGERSOLL, ALBERT M., 816 5th St., San Diego, Cala....1885
INGRAHAM, D. P., Pueblo, Colo....1889
IRVING, JOHN, 550 Park Ave., New York City....1894
ISHAM, C. B., Am. Mus. Nat. Hist., New York City....1891
JACKSON, THOMAS H., West Chester, Pa....1888
JACOBS, J. WARREN, Waynesburg, Pa....1889
JAMES, HOWARD K., 225 W. 38th St., New York City....1888
JEFFRIES, WILLIAM AUGUSTUS, 78 Devonshire St., Boston, Mass....1883
JESURUN, Dr. MORTIMER, Douglas, Wyoming....1890
JOHNSON, ALBERT I., Des Moines, Iowa....1885
JOHNSON, A. W., Upper Lake, Lake Co., Cala....1893
JOHNSON, FRANK E., Parkville, Kings Co., N. Y....1888
JOHNSON, JAMES HOWARD. Pittsfield, N. H....1894
JOHNSON, WM. S., Boonville, N. Y....1893
JOHNSTON, CHARLES HAVEN LADD, Southboro', Mass....1894
JONES, LYNDS, College Museum, Oberlin, Ohio....1888
JONES, Prof. MARCUS E., Salt Lake City, Utah....1890
JORDAN, A. H. B., Johnsonburg, Pa....1888

JORDAN, Prof. DAVID STARR, Stanford Univ., Cala.....1885
JUDD, SYLVESTER D., Harvard Univ., Cambridge, Mass.....1893
KELLER, CLYDE L., 318 Exchg. Blk., Salem, Oregon.....1892
KELLOGG, VERNON L., Stanford University, Cala.....1888
KENDALL, W. C., U. S. Fish Commission, Washington, D. C.....1886
KENNARD, FREDERIC HEDGE, Brookline, Mass.....1892
KENT, Prof. WALTER F., Lockport, N. Y.....1893
KEYSER, Rev. LEANDER S., Springfield, Ohio..... 1891
KIMBALL, R. E., 631 G St., N. W., Washington, D. C.....1893
KING, GEORGE GORDON, 5 W. 35th St., New York City.....1888
KIRKPATRICK, H. C., Meadville, Pa.....1891
KIRKWOOD, FRANK C., P. O. Box 364, Baltimore, Md.....1892
KNIGHT, ORA WILLIS, Bangor, Me.....1893
KNOWLTON, F. H., U. S. Nat. Mus., Washington, D. C.....1883
KOCH, Prof. AUGUST, Williamsport, Pa.....1891
KOCH, FREDERIC W., Univ. Cala., Berkeley, Cala.....1891
KOHN, GUSTAVE, 14 Carondelet St., New Orleans, La.....1886
KOUMLY, Rev. PIRMINE M., Seneca, Kas.....1892
KRAEMER, FREDERICK L., Box 198, Williamsport, Pa.....1893
KROM, STEPHEN ARTHUR, Plainfield, N. J. 1894
LADD, SAMUEL B., West Chester, Pa 1889
LAHEE, EUGENE H., Alton, Ill.....1893
LAMB, Prof. ELI M., Friends' High School, Baltimore, Md.....1891
LANGDON, EDWIN, Central National Bank, New York City.....1891
LANO, ALBERT, Madison, Minn.....1890
LANTZ, Prof. D. E., Manhattan, Kansas.....1885
LAWRENCE, ROBERT B., Mills Building, New York City.....1883
LAWRENCE, ROBERT HOE, 45 William St., New York City.....1890
LEVINGS, GLENN V. B., 117 W. 58th St., New York City.....1892
LEWIS, WILLIAM H., Pawtucket, R. I.....1890
LINSKILL, DAVID J., Plymouth, Pa.....1891
LIVERMORE, J., Newport, R. I.....1893
LONG, H. B., Worcester, Mass.....1889
LOOMIS, JOHN A., Paint Rock, Concho Co., Texas.....1887
LORING, J. ALDEN, U. S. Dep. Agriculture, Washington, D. C. 1889
LOWE, WILLOUGHBY P., Pueblo, Colo.....1893
LUHRMAN, JOHN, Jr., 158 Pacific Av., Jersey City, N. J.....1893
MACDOUGALL, GEO. R., 88 Wall St., New York City.....1890
MACGILLIVRAY, ALEXANDER D., Cornell Univ., Ithaca, N. Y..... .1890
MACKAY, Dr. A. H., Halifax, Nova Scotia.....1885
MACKAY, GEORGE H., Nantucket, Mass.....1890
MACOUN, Prof. JOHN, Geol. and Nat. Hist. Surv., Ottawa, Ontario..1883
MANN, Rev. ALBERT, 132 E. Hanover St , Trenton, N. J.....1894
MARCY, Prof. OLIVER, Evanston, Ill.....1892
MARIS, WILLARD LORRAINE, Newton, Bucks Co., Pa.....1894
MARSH, DANIEL J., Springfield, Mass.....1894
MAXON, WILLIAM RALPH, 132 Main St., Oneida, N. Y.....1894

MAY, FRANK DWIGHT, Jr., 17 Huntington St., Hartford, Conn.....1894
MCCORMICK, LOUIS M., Glen Island, N. Y.....1892
MCGREGOR, R. C., Palo Alto, Cala.....1889
MCILHENNY, EDWARD AVERY, Avery, La.....1894
MCLAIN, ROBERT BAIRD, Lock Box 1407, Ithaca, N. Y.....1893
MAITLAND, ROBERT L., 10 E. 35th St., New York City.....1889
MALI, CHARLES M., 93 Willow St, Brooklyn, N. Y.....1889
MARSHALL, ALFRED, 59 South Canal St., Chicago, Ill.....1886
MASON, EDWARD CAMPBELL, 110 Franklin St., Buffalo, N. Y.....1888
MELZER, JAMES P., Milford, N. H.....1891
MÉNGE, Capt. J. F., Meyers, Fla.....1892
MERRIAM, Miss FLORENCE A., Locust Grove, Lewis Co., N. Y.....1885
MERRILL, HARRY, Bangor, Maine.....1883
METCALFE, WILLIAM C., 21 Cortlandt St., New York City.....1886
MILLER, GERRIT SMITH, Jr., Peterboro', N. Y.....1886
MILLER, HARRY E., Croton Falls, N. Y.....1892
MILLER, JAMES HENRY, Lowville, N. Y.....1894
MILLER, Mrs. OLIVE THORNE, 628 Hancock St., Brooklyn, N. Y.....1887
MILLS, R. WALTER, Webster Groves, Mo.....1893
MITCHELL, WALTON, 534 Summit Ave., St. Paul, Minn.....1893
MONTGOMERY, THOMAS H., Jr., West Chester, Pa.....1891
MOORE, J. PERCY, Univ. of Pa., Philadelphia, Pa.....1886
MOORE, Dr. H. D., New Lexington, Pa.....1891
MORCOM, G. FREAN, Opera House Building, Los Angeles, Cala.....1886
MORRIS, GEORGE SPENCER, Olney, Philadelphia, Pa.....1887
MORRIS, ROBERT O., Springfield, Mass.....1888
MORRISON, GEORGE A., Fox Lake, Wis.....1891
MORTIMER, BENJAMIN, 391 5th St., S. Brooklyn, N. Y.....1888
MOULTON, LORENZO EDWARD, Monson, Maine.....1893
MURDOCH, JOHN, Rock, Mass.....1883
MURPHY, Prof. EUGENE EDMUND, Athens, Ga.....1893
NACHTRIEB, Prof. HENRY F., Univ. of Minn., Minneapolis, Minn.....1892
NASH, H. W., Pueblo, Colorado.....1892
NEAL, HERBERT VINCENT, 2 Shepherd Block, Cambridge, Mass.....1894
NICHOLAS, Rev. GEORGE L., M. D., Medford, Taylor Co., Wisc.....1888
NICHOLS, HOWARD GARDNER, Newton, Mass.....1892
NICHOLS, J. M., Greene, Maine.....1890
NISWANDER, Prof. F. J., Univ. of Wyoming, Laramie, Wy.....1893
NORRIS, GUY BRUNAUGH, Garden City, Kans.....1894
NORRIS, Rev. JAMES AVERY, Hastings on Hudson, N. Y.....1894
NORRIS, J. PARKER, 723 Walnut St., Philadelphia, Pa.....1886
NORTON, ARTHUR H., Westbrook, Maine.....1890
NORTON, ARTHUR HENRY WHITELEY, San Antonio, Texas.....1894
NORTON, RICHARD, Cambridge, Mass.....1888
OBERHOLSER, HARRY C., 557 Quincy St., Brooklyn, N. Y.....1888
OLDFIELD, W. A., Port Sanilac, Mich.....1891
O'NEIL, EDWARD, Sewickley, Allegheny Co., Pa.....1893

ONG, PLUMMER L., Laclede, Mo.....1888
ORTH, GEORGE S., 406 S. Hiland Ave., Pittsburgh, Pa.....1892
OSBORN, CHASE S., Sault Ste. Marie, Mich.....1893
OSBORNE, JOHN LANG, Manchester, N. H.....1894
OSBURN, Rev. WILLIAM, Nashville, Tenn.....1890
OSGOOD, WILFRED H., Willcox, Cochise Co., Ariz.....1893
OWEN, VIRGIL WILLIAMS, P. O. Box 774, Los Angeles, Cala.....1894
PAINE, AUGUSTUS G., Jr., 47 W. 45th St., New York City.....1886
PALMER, E. L., New Haven, Conn.....1891
PALMER, THEODORE S., Dept. of Agriculture, Washington, D. C.....1888
PALMER, WM., U. S. Nat. Mus., Washington, D. C.....1888
PANNEPACKER, D. E., 2550 North 12th St., Philadelphia, Pa.....1888
PARK, J. T., St. Elmo, Hamilton Co., Tenn.....1890
PARKER, J. GRAFTON, Jr., 100 Washington St., Chicago, Ill.....1894
PEABODY, Rev. P. B., Wilder, Minn.....1891
PEABODY, WILLIAM RODMAN, Cambridge, Mass.....1890
PEACOCK, W. F., Chico, Butte Co., Cala.....1888
PEARSON, T. GILBERT, Archer, Fla.....1891
PENNOCK, C. J., Kennett Square, Chester Co., Pa.....1888
PERKINS, CHARLES E., Hartford, Conn.....1888
PERNOT, E. A., Granger, Benton Co., Oregon.....1891
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PIERS, HARRY, "Stanyan," Willow Park, Halifax, N. S.....1891
PLEASANTS, J. H., Jr., 606 Cathedral St., Baltimore, Md.....1888
POMEROY, HARRY KIRKLAND, P. O. Box 575, Kalamazoo, Mich.....1894
POPE, ARTHUR LAMSON, Sheridan, Oregon.....1894
POPENOE, Prof. E. A., Manhattan, Kan.....1886
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PREBLE, EDWARD A., Dept. of Agriculture, Washington, D. C.....1892
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PRILL, Dr. A. G., Sodaville, Oregon.....1890
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RAINE, WALTER, 181 Bleeker St., Toronto, Ontario.....1889
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REED, HOWARD S., 1320 Gaylord St., Denver, Colo.....1894
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RICHARDS, JOHN BION, 10 Barnaby St., Fall River, Mass.....1888
RICHARDSON, W. M., Am. Mus. Nat. Hist., New York City.....1891
RICHMOND, CHARLES W., 1908 9th St., N. W., Washington, D. C....1888
RICKER, EVERETT WILDER, P. O. Box 5083, Boston, Mass.....1894
RIDGWAY, JOHN L., U. S. Geol. Surv., Washington, D. C.....1890
RIECKER, ERNST, 900 South 4th St.. St. Louis, Mo.....1888
RIKER, CLARENCE B., Maplewood, N. J.....1885
RIVES, Dr. WILLIAM C., 113 East 38th St., New York City.....1885
ROBBINS, WILLIAM A., 178 Garfield Place, Brooklyn, N. Y.....1888
ROBERTS, GEORGE W., West Chester, Pa.....1891
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ROOD, Mrs. E. IRENE, 202 Oakwood Boulevard, Chicago, Ill.....1893
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ROWLAND, THOMAS, 182 6th Ave., New York City.....1890
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ROZYCKI, STEPHEN, Bureau of Steam Engineering, Navy Dept., Washington, D. C.....1894
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RUSSELL, ROY, Kokomo, Indiana.....1891
RUSSELL, WILLIAM BLACK, Fiskdale, Mass.....1893
SAGE, HENRY M., Albany, N. Y.....1885
SARGENT, HARRY B., 366 W. 116th St., New York City.....1892
SAVAGE, DAVID LEWIS, Salem, Iowa.....1894
SCHALER, JOHN, Stamford, Conn.....1893
SCHURR, THEODORE A., Pittsfield, Mass.....1888
SCHWAB, Rev. LAWRENCE H., 101 Lawrence St., New York City....1892
SCOTT, W. L., 74 Sparks St., Ottawa, Ontario.....1883
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SKINNER, FRANCIS B., Rockville, Conn.....1894
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STEPHENS, F., Witch Creek, San Diego Co., Cala.....1883
STEPHENSON, Mrs. LOUISE MCGOWN, Helena, Ark.....1894
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TAYLOR, ALEXANDER O'DRISCOLL, 124 Bellevue Ave., Newport, R. I. 1888
TAYLOR, H., 63 Park Place, Bridgeport, Conn.....1893
TAYLOR, TRUMAN R., 200 N. Union St., Rochester, N. Y.....1892
TEST, FREDERICK CLEVELAND, U. S. Nat. Mus., Washington, D. C..1892
THOMPSON, ERNEST E., 86 Howard St., Toronto, Can.....1883
THOMPSON, FRANK J., Zoölogical Garden, Philadelphia, Pa.....1885
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THORNE, Capt. PLATTE M., 22d Inf. U. S. A., 513 Broadway, Albany, N. Y.....1885
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VAN DENBURG, JOHN, Acad. Sci., San Francisco, Cala.....1893
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VOORHEES, CLARK G., 33 W. 42nd St., New York City.....1888
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WALL, EDWARD, San Bernardino, Cala.....1894
WALTER, HERBERT EUGENE, 402 Center St., Chicago, Ill.....1894
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WEEKS, DAVID FRANKLIN, Portland, Oregon.....1894
WEIDMAN, JOE, Ames, Iowa.....1893
WEST, LEWIS H., Roslyn, Queens Co., N. Y.....1887
WEST, SAMUEL H., Flushing, Queens Co., N. Y.....1889
WHITE, FRANCIS BEACH, Cambridge, Mass.....1891
WHITE, STEWART E., Grand Rapids, Mich.....1890
WHITNEY, Prof. E. R., Binghamton, N. Y.....1891
WHITAKER, WILLIAM LINCOLN, Cedar Grove, Frankford P. O., Philadelphia, Pa.....1894
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WICKHAM, H. H., Beaver, Pa.....1890
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WILDE, MARK L. C., Camden, N. J.....1893
WILLIAMS, Dr. HENRY SMITH, 66 W. 84th St., New York City.....1893
WILLIAMS, J. BICKERTON, 710 Sherbrooke St., Montreal, Can.....1889
WILLIAMS, ROBERT S., Columbia Falls, Montana.....1888
WILLIAMS, W. J. B., Holland Patent, N. Y.....1893
WILSON, WM. EDWARD, 387 Olney St., Providence, R. I.....1894
WINTLE, ERNEST D., 11 Hospital St., Montreal, Can.....1887
WOOD, A. H., Painted Post, N. Y.....1887
WOOD, Mrs. JOSEPH, West Brookfield, Mass.....1893
WOODRUFF, FRANK M., Acad. Sci., Lincoln Park, Chicago, Ill.....1894
WOODRUFF, LEWIS B., 14 East 68th St., New York City.....1886
WOODS, WILLIAM J., State Bank Bldg., Richmond, Va.....1892

WOODWORTH, Mrs. NELLY HART, St. Albans, Vt. 1894
WORTHEN, CHARLES K., Warsaw, Ill. 1891
WORTHINGTON, R. B., Dedham, Mass. 1893
WORTHINGTON, WILLIS W., Shelter Island, Suffolk Co., N. Y 1889
WRIGHT, FRANK S., 14 Cayuga St., Auburn, N. Y. 1894
YORKE, Dr. F. HENRY, Hallock, Minn. 1891
YOUNG, CURTIS CLAY, 63 Greene Ave., Brooklyn, N. Y 1891
YOUNG, HENRY LATHROP, Poughkeepsie, N. Y 1894
ZWARG, EMIL, Marysville, Cala 1893

DECEASED MEMBERS.

ACTIVE MEMBERS.

Date of Death.

BAIRD, SPENCER FULLERTON ..... Aug. 19, 1887
GOSS, N. S. ..... March 10, 1891
HOLDER, JOSEPH B. ..... Feb. 28, 1888
JEFFRIES, JOHN AMORY ..... March 26, 1892
WHEATON, JOHN M. ..... Jan. 28, 1887

HONORARY MEMBERS.

BURMEISTER, HERMANN ..... May 1, 1892
GURNEY, JOHN HENRY ..... April 20, 1890
KRAUS, FERDINAND ..... Sept. 15, 1890
PARKER, WILLIAM KITCHEN ..... July 3, 1890
PELZELN, AUGUST VON ..... Sept. 2, 1891
SCHLEGEL, HERMANN ..... Jan. 17, 1884
TACZANOWSKI, LADISLAS ..... Jan. 17, 1890

CORRESPONDING MEMBERS.

BALDAMUS, EDUARD, Halle, Germany ..... Oct. 30, 1893
BLAKISTON, THOMAS W. ..... Oct. 15, 1891
BOGDANOW, MODEST N. ..... March 4, 1888
HAAST, JULIUS VON ..... Aug. 15, 1887
HOMEYER, E. F. VON ..... May 31, 1889
MARSCHALL, A. F. ..... Oct. 11, 1887
MIDDENDORFF, ALEXANDER THEODOR VON ..... Jan. 28, 1894
PREJEVALSKI, N. M. ..... Oct. 20, 1887
PRYER, HARRY JAMES STOVIN ..... Feb. 17, 1888
SCHRENCK, LEOPOLD VON ..... Jan. 20, 1894
SEVERTZOW, N. ..... Feb. 8, 1885
STEVENSON, HENRY ..... Aug. 18, 1888

Associate Members.

Adams, Charles F. ..... May 20, 1893
Allen, Charles Slover ..... Oct. 15, 1893
Atkins, H. A. ..... May 19, 1885
Avery, William Cushman ..... March 11, 1894
Beckham, Charles Wickliffe ..... June 8, 1888
Bolles, Frank ..... Jan. 10, 1894
Breese, William L. ..... Dec. 7, 1889
Corning, Erastus, Jr ..... April 9, 1893
Coe, W. W. ..... April 26, 1885
Elliott, S. Lowell ..... Feb. 11, 1889
Goss, Benjamin F. ..... July 6, 1893
Howland, John Snowdon ..... Sept. 19, 1885
Jenks, John W. P. ..... Sept. 27, 1894
Jouy, Pierre Louis ..... March 22, 1894
Kumlien, Thure ..... Aug. 5, 1888
Linden, Charles ..... Feb. 3, 1888
Mabbett, Gideon ..... Aug. 15, 1890
Minot, Henry Davis ..... Nov. 13, 1890
Northrop, John I. ..... June 26, 1891
Park, Austin F. ..... Sept 22, 1893
Richardson, Jenness ..... June 24, 1893
Small, Edgar A. ..... April 24, 1884
Vennor, H. G. ..... June 8, 1884
Willard, Samuel Wells ..... May 24, 1887
Wood, William ..... Aug. 9, 1885

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LECONTE'S THRASHER (HARPORHYNCHUS LECONTEI)

THE AUK:

A QUARTERLY JOURNAL OF

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VOL. XII. JANUARY, 1895. NO. I.

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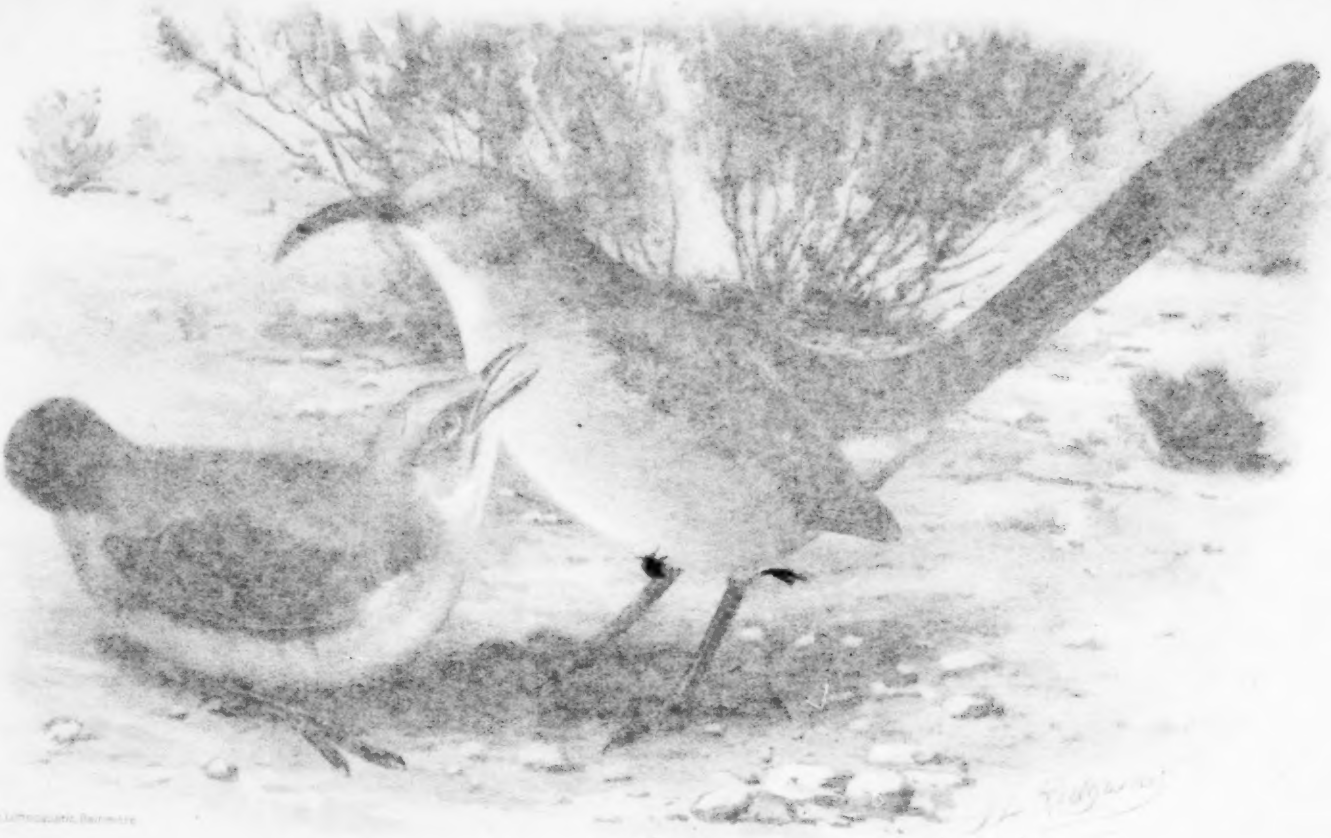
BY O. WIDMANN.

ST. LOUIS, OCTOBER, 1893.

MR. WILLIAM BREWSTER and Mr. Bradford Torrey made us acquainted with the Robin's summer roost. They tell us that the roosting flights diminish rapidly after the middle of September and that by the end of the first week in October the roosts are practically deserted.

This corresponds to what is going on at the winter roost. As the Robin deserts the former, it appears at the latter, and at the particular roost of which I will speak now, the maximum of frequency is reached by the middle of October, when the roosting birds must be numbered by thousands and, perhaps, tens of thousands.

This roost is situated sixty miles northwest of St. Louis in the northeast corner of Lincoln County, Missouri. It is a wide, open marsh, between King's Lake on the west and the Mississippi River on the east, near to the former, but about two miles from the latter. The ground is highest along King's Lake and lowest



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This roost is situated sixty miles northwest of St. Louis in the northeast corner of Lincoln County, Missouri. It is a wide, open marsh, between King's Lake on the west and the Mississippi River on the east, near to the former, but about two miles from the latter. The ground is highest along King's Lake and lowest

half a mile east of it, where the rain and overflow leave a deep and long slough. The marsh dries up slowly during the summer and in dry seasons the slough may even become nearly or entirely dry in fall.

The higher levels of the marsh are cultivated and, when visiting the ground in October, we may find parts of it sown to wheat while on others corn has been shocked and some of the marsh grass has been made into hay and put up in large stacks.

King's Lake is fringed by a nice growth of trees among which we recognize pinoaks, elms, soft maples, pecans, persimmons, honey locusts, willows and in the fore ground several fine specimens of red haw, covered with scarlet fruit, which together with the adjoining farm buildings make a most picturesque landscape.

The lower parts of the marsh, with the exception of the slough itself, are overgrown with reeds[1] five feet high, bending over in all directions. These reeds are matted into a regular thicket which is not easily penetrated. In the fall the reeds are dry and yellow, some cinnamon and even dark chestnut brown.

It is in these reeds that the Robin finds a safe retreat for the night, sheltered equally well from wind and cold, rain and snow, and comparatively safe from prowling enemies. During the day nothing betrays the roost. Not a Robin is seen in the neighborhood all forenoon and for several hours of the afternoon. An hour or two before sunset a few may arrive and stay in the trees along King's Lake, but nobody would suspect anything extraordinary until half an hour before sunset when the great influx begins.

The new arrivals no more fly to the trees but alight on the ground, some in the wheat field, some in the meadows, some on the corn and hay stacks, but the majority flies directly into the reeds, while the others shift from place to place until they, too, disappear. They do not come in troops like Blackbirds, but the whole air seems for a while to be filled with them, and standing in the marsh, one can easily see that they come from all points of the compass, all aiming toward a certain tract of reeds, a piece

[1] Known in botanical works as fresh-water card-grass (*Spartina cynosuroides* Willd.).

of about forty acres on some of the lowest ground where the last remains of water are now vanishing, leaving heaps of dead and dying fishes in the puddles (mostly dog, cat, and buffalo fishes).

When unmolested the Robins are not long in settling down and out of sight amongst the high and thickly matted reeds, and it is not nearly dark when the last has disappeared and nothing indicates the presence of so many thousand Robins but an occasional clatter, soon to give way to entire silence. If one enters their domain at night, they start with a scold, one by one, and not until one approaches very closely, to drop down again at no great distance.

Associating with them in the roost sleep a goodly number of Rusty Blackbirds, while the Bronzed Grackles keep somewhat apart. They arrive in troops with the last Robins and leave also a little later in the morning.

The Robin leaves its roost with the break of day, in about the same mysterious way in which it came. For a few minutes the whole air is alive with Robins, not in troops or heading in certain directions, but every one seems to follow another route, some moving at moderate heights through the misty air, but the greater number rise rapidly, though with laborious wing, heavy with dew, in order to gain the drier and purer atmosphere above, where they disappear as mere specks in the first rays of the just now rising sun.

Where are they going? The sun is hardly high enough in the sky to throw its soft light on the dew-drops in the marsh when not a single Robin is either heard or seen. Several clouds of Grackles have swept over the marsh with heavy, whistling wing and have disappeared in the distance; the marsh now seems deserted. Silence reigns. The sun's rays are beginning to soften the chilliness of the October air. The Leconte's Sparrow creeps stealthily up to an elevated position to dry its wet dress in the sunshine. Swamp and Song Sparrows leave the reeds to visit the tussocks in the oozy slough. The two Marsh Wrens come out of their retreat for moments to air their tiny wings. Snipes and Pectoral Sandpipers are at work on the softer parts of the slough. Rails sneak from under the decaying leaves of water-plants and the Marsh Hawk has occupied its favorite perch in

the swamp. A few Rusties may still linger in the neighborhood but no Robin is heard or seen. Where did they all go?

It takes considerable quantities of food to satisfy so many thousands of birds and we should therefore not wonder to find them fifty and more miles away from the roost, visiting certain known feeding grounds or wandering in search of new ones and still return in the evening to the same roost, day by day, for weeks, and some of them even for months.

With the advent of severe winter weather, generally about the middle or last part of November, the great majority leave this northern roost, presumably for another roost in more southern climes,[1] but enough remain in ordinary seasons, such as 1893–94, throughout the winter, to send detachments on foraging expeditions to regions as far away as St. Louis County. Suppose a frosty morning in midwinter, with the sun just rising in its cold splendor, finds us standing in the wooded bottomland on the right bank of the Missouri River, near Créve Cœur Lake, thirty-five miles southeast of the roost. Flickers have just left their sleeping apartments in the high old timber and are gathering on tree-tops to enjoy the first rays of the rising orb. Troops of Red-winged Blackbirds and smaller parties of Cowbirds have passed by, coming from a neighboring roost. The first Crows are appearing on the scene, tired by the uninterrupted flight from the distant roost. It is now ten minutes since the sun is in the sky, when all at a sudden the startling notes of the Robin are heard overhead and a dozen or so alight in the tree-tops to rest a minute or two. While we are yet watching them, a few more are seen coming from the same direction in the northwest and after making things lively for a few moments, calling and chattering, all are gone, proceeding on their tour through St. Louis County. We may meet them again, some time during the day, somewhere along the border of a shallow water or in the recesses of a dilapidated forest, feeding among the debris in company with several kinds of Sparrows, Bluebirds and similar braves who risk their lives to prove the mildness of a Missouri winter.

[1] Since writing the above I have visited, in the last week of October, a very large roost in the flags of Indian Slough, a branch of the St. Francis River, southern Missouri, not far from the Arkansas state line.

Later in the winter, the habits of the Robin change. Those who left this roost return no more in spring. With the very first awakening of spring the old Robin's love for home surroundings no longer allows of his wandering forth and back through the land like an aimless tramp; he no longer finds pleasure or seeks safety in hiding in the swamps like a thief. His only desire is to hurry to his old breeding grounds as fast as vanishing snow and melting ice permit. He braves all dangers and the rigors of late winter weather like a man, content with the all-inspiring company of his devoted spouse.

II. APRIL 12, 1894.

What a transformation has been going on at the site of the Robin's roost! Everything looks changed! The corn-shocks have been removed, the field ploughed and the marsh-grasses, even the flags, have been burnt to the ground. For miles around the level ground looks black and bare. No Robin and no Blackbird could be expected to roost on this charred waste; and it is questionable if any birds at all visit such an uninviting solitude. But let us try; let us go over the entire tract and see if it is really forsaken.

What at first seemed a universally and equally charred plain proves by closer inspection to be a checker-board of tracts, some lately burnt, some, not yet touched by fire, have only been trampled down by grazing animals, and in the region of the slough we find small islands of high and tangled grass, which have been saved from destruction by a belt of moist ground intervening. The winter and early spring have been exceptionally dry; the water in the slough or lake, as it is called where free from plant growth, is very low, nowhere more than six inches deep. There are large mud-flats from which the water is just receding. Adjoining these are zones of mire covered with the remains of withered spatter dock, and these in turn are surrounded by a girdle of partly burnt flags.

But we have not been on the ground long before we detect our error. The marsh is not the dreary void for which we took it. We have hardly reached the old cornfield, lately turned over

to be worked into a new cornfield — if only the Mississippi will be merciful enough to spare it from an untimely flood — when we notice that on and between the large clods everything seems alive with little birds. And how busy they are! Those nearest to us run in stooping attitude as fast as they can long distances down the furrows; the others walk by fits and starts with watchful eye, darting right and left, to pick up the bread and meat which the plow so kindly exposed. Now and then one will fly up into the air, ten or more feet, and with a dexterous turn will overtake a fleeing insect. This is a flock of Titlarks or Pipits, *Anthus pensilvanicus;* perhaps a hundred of the sprightly birds, and as long as they stay with us the marsh will not be the desolate wilderness for which at first we took it. They have a way of enlivening a region in the most interesting manner. They are not always on the ploughed field, and when they leave it and take to wing as if to say good-bye forever, they will shortly be back again and try another piece of ground, the very one which has been charred so recently that the cinders still preserve the shape of the plant of which they formed the frame.

And even if not seen their endearing voice is so often in the air, that we are always cognizant of their presence. Small parties follow us to the mud-flats in the lake and even walk deliberately into the water, up to the belly, to obtain a toothsome morsel from below its surface.

Though belonging to the Wagtail family, the wagging of the tail does not play such a conspicuous rôle as one might suppose. Indeed, it is only performed when its owner is in a sort of excitement, especially when in a state of undecision, where the fluctuations of its mind are expressed in, or at least correspond with, the vacillations of its tail.

The white tail-feathers do not form such a distinguishing feature as they do in Junco, for instance. The white is but little visible when the bird takes wing, but it shows very plainly on alighting, when the fully spread tail-feathers check the force of the descent. The dress they wear this time of the year varies greatly in intensity and in color with the individual. The cinnamon-buff of the lower part is mostly of a yellow cast, but not seldom a decidedly reddish hue. The amount of dark spots

is also greatly differing and some have even a pronounced maxillary line, enclosing a white chin and running down to a black patch in the middle of the breast. Some appear to be really blue above, others decidedly greenish. Their note is a short *tsit-tsilit* and the flight at first a fitful jumping from one side to the other, then undulatory like a Goldfinch's, changing at last to a more protracted rise and fall not unlike a Horned Lark's.

But Anthus is not the only inhabitant of the lonely marsh. Sometimes when a flock goes up we hear besides the well-known *tsit-tsilit* another note of abrupt sharpness, which can hardly belong to the gentle Pipit. It must come from a wilder bird, who only frequents the same feeding ground and goes up when they go. It is no less a personage than Smith's Longspur, *Calcarius pictus*, and if we go carefully over the ground we shall soon make its acquaintance. It needs care, because, when alone by themselves, they do not go up as readily as Anthus. We may walk right among them and they will not fly up; they only run with lowered head a few yards away from us and squat until we have passed. They use any depression to hide in, and on the low grounds they have not to run far, since nearly every square yard has its crawfish hill.

Upon the slightest indication of their presence we stop and look about us, scrutinizing every foot of ground. Before long, we may see one, two, three or more around us, some with conspicuous white shoulders, light gray and dark, black-striped head and yellowish napes; others without the white on the shoulders, comparatively plain birds, females. There is an obvious similarity of the under parts with that of the Titlark.

They give us plenty of time to look at every one, but as soon as one goes up with its sharp alarm-note, immediately birds are seen to rise from twenty different points around us, go straight and in spirals up above us, all showing in a striking manner the white patches on the under wing-coverts and the white outer tail-feathers; emitting their wild *click*, they hover right above our heads, go higher and higher until they gain an altitude, where even the best field-glass can reach them no more. Though they go high, they do not go far and after a little manœuvring may come down again and settle within half a mile of the spot from where they rose.

But while we are busy watching them, a troop of thirty Golden Plovers sweeps by, low over the marsh, and seeing us, they draw a few wide circles around us in a style which in beauty and precision of execution cannot be surpassed.

When satisfied that all is safe, they alight, all at once, as if moved by a single thought, all at the very same moment, and keep standing close together, all in one bunch, all pointing the head one way, all motionless for several seconds, all eyes fixed upon the suspicious looking intruder. They are most beautiful creatures; the symmetrically shaped body with head, neck, wings, tail and legs, all in the most pleasing harmony of proportions; the large, intelligent, dark eye, set off to best advantage by a pure white curve, half encircling it and running down along the side of the neck; the back reflecting golden light, while the white underparts begin to show dark cloudings, in some few even a black area.

Now they begin to feed, running swiftly over the newly burnt ground, gathering food at every run, when suddenly they spy a large body of others of their kind, coming nearer and nearer, in a long-stretched line, filling the air with a medley of melodious whistles in many different keys — and up they go like a flash to join their passing brothers. The whole troop, perhaps 500 in all, manœuvres now in common and like a regiment of the best drilled soldiers, they perform the most astonishing evolutions in turns and sweeps, now high, now low, now all a flash of brightest gold, then all a streak of silvery white, almost vanishing from view in the distant sky, to return with lightning rapidity so low as to almost touch the ground with the tip of their long, swift pinions.

The marsh is after all not the deserted waste for which it might be taken, and though the April moon rises upon it without throwing the shadow of high and floating grasses upon slumbering Robins and Blackbirds, as it did in fall, its soft light is reflected from many a golden back of north-bound wanderers who need no shelter during night but nestle down upon a lawn-like ground, and, judging from the countless number of white spots that mark their stay, return to their favorite roost for several nights.

And we have not yet visited the slough or lake, as it is called. It is just full of life and the birds there have to-day a holiday.

They seem to feel at home and when disturbed are loath to leave. This out-of-the-way slough is at times a true asylum for the poor hunted game-birds. A few St. Louis business men have acquired the sole right to hunt with the intention to spend the Sundays here a-hunting; but the county officials found it good to enforce the law which forbids shooting on Sundays. The consequence is that the birds have a good time generally and on some days it looks as if it were a veritable paradise for Ducks and Snipes, when they feed unmolested from morn till night.

If we slowly and carefully approach, there will be a little stir among them, but soon all will resume their vocation, especially when the day is cool and birds are hungry. In such weather the Snipes do not lie still but feed all day. See, one walks in the water just in front of us, knee-deep, unmindful of our presence, continually thrusting the long bill into the mud below, immersing the face to the edge of the eye.

A party of Mallards, an equal number of males and females, is swimming in the water, only a hundred yards away. They try to hide behind the spatter dock, the females at least, but the beautiful greenheads will never for a moment turn their watchful eye from us, and if we should make the least suspicious demonstration, all would be up at once.

Six Pectoral Sandpipers, *Tringa maculata*, come with a song, and, after alighting near the edge of the water, make immediately into it and begin to feed, picking at every step.

The slough forms here a small lake, a few inches deep, in fact just deep enough to allow two Yellow-legs, *Totanus flavipes*, to wade all over its midst, while the Pectoral Sandpipers with their shorter legs must remain along its edge. Thus they feed together for hours, if undisturbed, and we have ample opportunity to compare their appearance and behavior. At first sight, their dress seems pretty much alike, but the back of Totanus is finer and darker mottled, and viewed from the side the black wing-tips form a conspicuous patch, completely hiding the white upper tail-coverts, while in Tringa the corresponding region shows a white area, formed by the upper and lower tail-coverts. The superciliary in both birds is only obvious when the birds are seen from in front; the face of Tringa is more Snipe-like, the bill of Totanus is

darker, longer, straighter. There is no jerking with the head in Tringa as in Totanus. The former goes up with a Swallow-like note, the latter with a loud whistle, which it sometimes utters while in the water, and not seldom does it stretch its leg or raise its wings straight overhead, to show the pretty lining of that powerful wing which makes him such a wonderfully swift flyer.

As the Yellow-legs go up and fly away from us, the white tail is a striking object and when on wing the long and slender body, with legs sticking way out behind, is a peculiar sight. The white outer tail-feather of Tringa is just visible as a white margin and when the bird is speeding through the air it has some resemblance to a Swallow.

The Pectorals, though there are always a few together, seem disposed to be quarrelsome at this season, and frequent bickerings occur, in which they jump up against each other and utter something like bad language.

Following the border of the slough we come upon many solitary Snipes; they go up but do not leave the slough, which is about a mile in length, and has the shape of an S. In the peninsulas formed by the curves of the S the grass and weeds have escaped the fire entirely and remain in their original wilderness. Here is where the Savanna and Swamp Sparrows find a retreat to their liking, and the old Red-winged Blackbird is occupying a perch on one of the few small bushes, in which his last year's nest is still hanging. He declares with wonderful perseverance over and over again that he is the owner of the patch.

A pair of Shovellers, *Spatula clypeata*, fly low over the slough, and, as our eyes follow admiringly the showy birds, we detect a bunch of Blue-winged Teals, which upon nearer approach go up in pairs with a soft, peculiar whistle. Troops of Pipits and Golden Plovers come towards evening to bathe and drink and leave again. On a part of the marsh set aside for pasturage and with the old grass pretty thick in places, a number of small birds spring up and fly a few rods, low over the ground, and drop out of sight. Using a little strategy we succeed in driving one to the border of the slough, where he perches in full view and allows an easy identification: a Leconte Sparrow in high plumage, deep yellow head and neck with almost black stripes and markings in sharp contrast.

Approaching stealthily a small, isolated pool a pair of Baldpates is very much surprised to be so rudely disturbed and starts off with exclamations of genuine disgust.

We leave the marsh and as we near the farm a fine old Marsh Hawk, with azure on his back and a ray of sunset scattered over the breast, is started from a fence post. Traversing a patch of high weeds we are greeted on all sides by farewells of a restless throng of Tree Sparrows, assembled here to fix the day or rather the night for the approaching departure. With the exception of the Red-wings all birds, which we have met to-day, are only transient guests, and another week or two will carry off the last of them to the northward. The scene will then be changed and will be very different from what we saw to-day, since other forms of life will take the places of the departed ones.

ON THE NESTING OF KRIDER'S HAWK (*BUTEO BOREALIS KRIDERI*) IN MINNESOTA.

BY P. B. PEABODY.

THE following notes are based upon three years' observations in a region quite unfavorable to the Red-tails (*Buteo borealis* group), wherein, nevertheless, though I have never seen a *borealis* proper, I have found *krideri* fairly abundant.

The center of this region lies in Steele County, some sixty miles north of the Iowa line. Northward it extends into Rice County, explored, partially, for fifteen miles. To the westward it extends sixty miles into Nicollet County through a well-wooded region, and is practically unexplored. To the east and south of the central point is no timber for miles at all suitable to Buteonine needs.

All this region was originally covered with heavy timber, even far back from the water courses; but the primeval trees are now confined to very small and isolated patches, or to a very few

scattered individuals on steep banks or in deep ravines, along the creeks and rivers. I am hence justified in considering this region unfavorable to the Buteos, yet I have found *B. borealis krideri* fairly abundant, while at no season of the year, though constantly on the watch, have I ever seen a typical *borealis*, or even a specimen that could be considered in the least degree equivocal.

To the southwest of the indicated section lies what may be termed the Heron Lake region. From Mankato, which lies in the timber belt above mentioned, for a distance southward of fourteen miles, I was surprised to find, in an exceptionally well-favored region, no Buteo nests whatever. At Lake Crystal (fourteen miles south of Mankato) — a wooded and watered oasis in the waste of surrounding prairie — I found two pairs of *krideri* breeding. In the vicinity of Heron Lake, a typical prairie region, fifty miles to the south of Lake Crystal and at distances of from one to ten miles from the lake, I have observed some half a dozen specimens of Krider's Hawk; but, in all this region, no examples of *borealis* have been noted. The specimens of *krideri* near Heron Lake undoubtedly breed in the sparse timber along the Des Moines River, whose nearest point to Heron Lake lies about twelve miles away.

At the central point of the Steele County region, four pairs of breeding birds were found; in Nicollet County, one; in Blue Earth County, at Lake Crystal, two. From all these, ten sets of eggs have been taken, eight of which are herein described. All of these nests have come under my personal observation.

SET I.— Owatonna, Rice County, Minn., May 2, 1892. Incubation, two-thirds. Locality, a short, deep, wooded ravine, field girt, one-fourth mile from river. Nest evidently second year in use; of sticks lined with bark strips, grass and adventitious feathers; not large, but deeply cupped, in triple crotch of elm, forty feet up, midway of the large branches. Two eggs: No. 1, rounded oval, 2.26 x 1.86; many very obscure livid patches; large, dull spots of cinnamon, dispersed; spots of darker capping the larger end; very *borealis* like. No. 2, oval, 2.43 x 1.85; a few vague hieroglyphic markings of dull cinnamon, forming a quasi ring at smaller end, thus resembling eggs of *B. swainsoni*. Both birds near nest. Female on nest, and fully identified. The male demonstrative, but shy.

On May 2, 1893, the birds were repairing the above nest, three weeks later than the previous year; but they were driven away or killed.

SET II.—Nicollet Lake, Nicollet County, Minn., May 11, 1892. Incubation, complete. One egg 'pipped,' the other half cast off. Chicks preserved in alcohol. Locality, a heavily wooded island. Nest in a great elm, nearly inaccessible, far out on horizontally spreading branches of a large main bough, at the very top; an old, broad and flat nest, roughly made of large sticks, with hollow, twelve inches in diameter. Lining, fibrous bark, twigs, feathers of small birds. Two eggs: No. 1, oval, 2.27 x 1.28; marbled, chiefly at smaller end, with dull lilac, over-laid with a few spots of dull cinnamon at point; a blotch and a few small spots of dark, dull cinnamon at larger end. No. 2, oval, 2.36 x 1.78; obscurely spotted, over entire surface, with lilac and dull cinnamon, heaviest at larger end, where, a single large, lunate, semi-encircling blotch. Both eggs very *lineatus* like. Female on nest. Both birds fully identified, as they slowly circled, close overhead, with loud and repeated screaming.

These birds bred, the following year, in the same locality, and the female, I believe, was taken with her eggs.

SET III.—Owatonna, Rice County, Minn., May 3, 1893. Incubation, advanced. Locality, the side of a long, deep ravine, one-fourth mile from river, one-half mile from nest I. Nest, in small basswood, midway up, in triple vertical crotch, thirty feet from ground; a slight, new nest of small sticks, bark-fiber, and a very little grass. One egg (incubated); elongate oval, 2.50 x 1.84; everywhere obscurely marbled and blotched with exceedingly pale lilac and cinnamon, heavier near and at the larger end. Female on nest. Fortunately secured, winged by a long high shot. Made little resistance when taken alive. Characterized as follows: Length, 21.75 inches; wing, 16; extent, 50. Iris dark hazel; cere plumbeous yellow. Upper parts throughout slightly blanched. Tail very pale red, subterminally and narrowly brown, white-tipped. Upper breast with a patch of chestnut brown on each side at bend of wing (precisely like the markings of a young Black Tern, though of relatively less area). Entire under parts otherwise perfectly white, save for an obsolescent transverse band of blackish brown (consisting of very narrow shaft-lines) between breast and belly; feathers on sides, under the wings, barred with fulvous.

At ordinary gun-range, this bird like all others observed, appeared underneath to be perfectly white.

On April 22, 1894, a pair of birds were at the above described nest and very uneasy. No repairs on nest, which was not visited by me later.

SET IV.— Owatonna, Rice County, Minn., May 3, 1893. Incubation, far advanced. Locality, the very steep, deep, and heavily wooded bank of river, fringing a cultivated plateau. One mile from nest III. A flat, old nest, far out, nearly over the water, on leaning branch of rock maple, sixty feet up. Large sticks. Lining, soft fibrous bark and grass. Female on nest; when the latter was discovered flew away, showing characteristic markings, but made no outcry, and did not return. Three eggs: No. 1, ovate, 2.50 x 1.89 (cracked and addled); largely unmarked; pale cinnamon blotch at smaller end; a cap of similar blotches at apex, over-laid by a very few dark cinnamon spots. No. 2, rounded ovate, 2.45 x 1.87; everywhere, but chiefly at the apex, very delicately marbled with an admixture of pale cinnamon and lilac, beautifully veined with deeper lilac; scattered lilac blotches at smaller end. No. 3, much rounded, ovate, 2.48 x 1.98; largely unmarked, apex capped with blotches of cinnamon lilac which are over-laid with three or four daubs of bright, dark cinnamon. This set thus like eggs of *B. lineatus.* The above nest was unoccupied April 22, 1894.

SET V.— May 6, 1894, Owatonna, Minn. Incubation, three-fourths. Locality, a hillside, on a wild 'quarter section' of timber land three miles east of the river; dense undergrowths of hazel, cherry, and poplar; scattered primeval white and black oaks. Nest, two-thirds the distance up a small black oak-tree, at base of small branches, close to trunk. The original nest had blown or settled outward, and the '94 nest was built on its upper edge, thirty-five feet from ground, of sticks, lined with poplar bark, grass and corn-shucks. Three eggs: No. 1, ovate, 2.49 x 1.87; white, a circle of longitudinal pale cinnamon streaks about larger end, over-laid with a few darker blotches. Scattered spots over the rest of the surface. No. 2, size, shape, color, quite like the above, save that the streaks center at the apex. No. 3, distinctly pyriform, 2.50 x 1.90. Whole surface spattered obscurely, and apex crowned, with spots of cinnamon.

A second nest appears to have been built in 1893 by these birds, in a white oak forty rods away, in a valley near the margin of the woodland. This nest was first seen from the highway in March, 1894.

SET VI. — On April 22 following, the above site was revisited. Nest V was unoccupied, but the female *krideri* was found on the nest above indicated, a slight structure, but little more than half the distance up a rather small, primeval white oak, close to the trunk. The deep hollow was lined with corn-strippings. Distance, fifty feet up. Two eggs: No. 1, remarkably like No. 3 of the preceding, 2.50 x 1.87; rather pear-

shaped than pyriform; the cinnamon spots a little larger and more scattered, thickest, however, at apex. No. 2, attenuate oval, 2.50 x 1.77; scattered spots and scrawls of cinnamon over the entire surface, with a delicate marbled circlet about the smaller end, where, also, a few bright spots.

The kinship between this and the preceding set is very evident. The female remained near the nest, but her mate was for some time invisible. A large blackish hawk (Western Rough-leg?) circling high above, long watched the female, whose mate, as typically colored as herself, presently appeared.

SET VII. — Taken for me at Lake Crystal, Minn., April 30, 1894, in a dense wood bordering a lake. Nest in a fairly large black walnut (a tree quite rare in Minnesota) not half way up, close to the trunk, not large, of coarse sticks, lined with bark-shreds and other fine substances. Identification well established. Incubation, none. Two eggs: No. 1, rounded, ovate, 2.47 x 1.88; white, with a few faint, livid and ferruginous markings. A spirally streaked cap of cinnamon-lilac at small end, the streaks not meeting at point. No. 2, nearly sub-spherical, 2.47 x 1.90. Blotches of lilac tinted with cinnamon, massed at apex. A few scattered spots of the same on remainder of the surface. Thus an exquisitely marked and colored set, the eggs very strikingly unlike.

SET VIII.— On the fifth of May, 1894, I explored the timbered country between Minneopa, near Mankato, and Lake Crystal. Though the region was highly favorable, not a single Buteo nest was found. Reaching the lake at nightfall, I passed rapidly through the singularly venerable belt of ancient, gnarled white oaks bordering the lake, and, just before dark, I stood in an open spot two miles from nest VII, at the base of a great isolated white oak, "feathered to the toes," in which, near the top, in a nearly vertical main branch, was a very large nest. After a half dozen raps with my spur, a hawk reluctantly spread her wings and sailed into the darkness. Identification was impossible. A ridiculously easy climb of seventy-five feet, without spurs, revealed, to my chagrin, but a single egg lying in the large nest-hollow, which was lined with bark-strips and a single corn-cob. On the edge of the nest lay the head and shoulders of a striped gopher. The egg proved fresh. June 9, the nest was revisited at daybreak. The female very reluctantly left the nest, and was clearly seen. Both birds moved noisily about. The nest, recently decked with leafy twigs and flecked with down, con-

tained two eggs. The three eggs taken are treated, arbitrarily, as one set.

Three eggs: No. 1 [May 5], fresh, small, ovate, 2.32 x 1.82; white, with bluish tinge. Beautifully painted here and there, chiefly at apex, with small blotches of vinaceous cinnamon, the only egg thus colored and marked in the whole series. No. 2 [June 9], incubation nearly complete. Rounded ovate, 2.33 x 1.87; spotted and specked, mostly near apex, with purplish cinnamon, thus intermediate between 1 and 3. No. 3, nearly oval, 2.34 x 1.82; specks of cinnamon everywhere; at small end a circlet of stippled and marbled cinnamon blotches.

The nest containing these eggs had been occupied for years. It is situated within forty rods of a farm-house. A number of times, I am told, one bird of the pair has been shot, the remaining bird persistently remating and returning. The eggs were taken in 1892 and in 1893. The tenacity of the birds to this particular nest cannot be attributed to lack of eligible sites.

While loath to generalize, especially on mooted points, I am yet very sure that the eggs in the series just considered much more closely resemble in their markings the eggs of *B. lineatus* than they do those of *B. borealis* proper. As to characteristic traits and habits, I have observed nothing whatever to differentiate Krider's Hawk from the species to which it is allied.

I must mention that a careful collector sent me, in 1893, from Nicollet Lake, he having taken previously a set of Krider's Hawk with parent bird, a set of the eggs of typical *borealis*. These eggs are characteristic of the species, and radically unlike any eggs in my series of Krider's Hawk, except one egg of set I. A nest of Buteos, — not *surely borealis*, and certainly not *swainsoni*, — was taken this season near the city of St. Paul. I am confident that these eggs will prove next season to have been those of Krider's Hawk. I am also confident that a more critical search for and study of the Minnesota Buteos will greatly extend the known breeding range of Krider's Hawk, many 'Red-tail' eggs taken in this and adjoining States being, very likely, referable to the subspecies. I shall be very grateful to any collectors in Minnesota, the Dakotas and Manitoba, who may be kind enough, now or hereafter, to send me their notes on *B. borealis*, and any thoroughly sifted and reliable information as to the occurrence and breeding of Krider's Hawk in their vicinity.

THE NEST AND EGGS OF THE OLIVE WARBLER (*DENDROICA OLIVACEA*).

BY WILLIAM W. PRICE.

THE Olive Warbler, *Dendroica olivacea* (Giraud), is not uncommon in the higher pine-covered mountains of southern Arizona. I met with it during the summer of 1894, in the Huachuca, Chiricahua, Graham, and White Mountains.

My first observation of this species was made on May 22, in the Huachuca Mountains. I was on a ridge at nine thousand feet elevation, in open pine woods, studying a colony of Violet-green Swallows, which had nests in some dead trees. Suddenly an Audubon's Warbler, a male in full spring plumage, darted by me, closely pursued by a smaller orange-headed bird. Just as they had passed me, the smaller bird, which proved to be an adult male Olive Warbler, alighted on a low pine branch and uttered a low, short song. I secured it, and to my delight, held in my hand the first male Olive Warbler I had ever seen. Later in the day, in open pine woods at about the same elevation, I obtained another adult male from among low pine branches, where it was busily searching after insects. On this occasion, I saw no females, and I had reason to believe that with this species migration had just begun.

I next saw the Olive Warbler on June 10, on the summit of the Chiricahua Mountains, at about nine thousand feet. The open pine woods here were very similar to those in the Huachuca Mountains, where I had already taken the bird. On June 14, I secured three specimens, two adult males and a female. The female had evidently laid her set of eggs. I saw several other specimens on that day, all in open woods and all busy searching for insects.

On June 15, in the Chiricahua Mountains, I noticed a pair of Olive Warblers apparently at nest-building. The region was a dry open park, thinly set with young pines (*Pinus jeffreyi*), at between nine and ten thousand feet above the sea. I saw a female, closely followed by a male, fly from a bush of spirea

(*Spirea discolor*) to the top of a small pine, and busy itself on a small horizontal limb partially concealed by pine needles. She soon returned to the spirea, followed by the male, which did not enter the bush but perched on a pine branch near by. The female again flew with a dry flower-stem in her bill, from the bush directly to the pine, where a nest was in process of construction. The male again accompanied her and alighted on a twig, uttering at times a liquid *quirt, quirt, quirt,* in a descending scale. I watched them for over an hour, when they finally disappeared. During this time, the male did not once assist at nest-building, but accompanied the female back and forth. On June 18, I again visited the place and found the female busy at work, but the male was as idle as before.

On June 21, I was fortunate in securing a male and female, and two young Olive Warblers, the latter just able to fly. The adults were feeding the young which were noisy, as most young birds are. This male was not in fully adult plumage and was very similar in coloration to the female.

A few days after, a forest fire drove me from my camp, and it was not until July 1 that I was able to visit the nest. The female was sitting, and when frightened from the nest, kept hovering about, but made no sound. The male did not appear at all. The nest was compactly built and placed on a small horizontal branch, about forty feet from the ground, and about six feet from the top of the tree. The eggs, four in number, were in an advanced state of incubation.

I subsequently found the Olive Warbler both in the Graham and the White Mountains. This latter range is in east-central Arizona, and is apparently the northern limit of distribution of this species.

The body and walls of the nest are composed of rootlets and flower stalks of *Spirea discolor*, and the inner lining consists of fine rootlets and a very small quantity of vegetable down. It is a compactly built structure, measuring about 4 inches in outer diameter by $1\frac{3}{4}$ inches in depth; the inner cup measures 2 inches in width by $1\frac{1}{8}$ inches in depth.

The eggs are ovate in shape, the shell is fine grained and without lustre. The ground color is sage green and the egg is heavily

blotched and spotted, especially about the larger end, with clove and sepia brown, and lighter shades of drab and olive gray. They bear no resemblance to the known eggs of any of our Warblers. They measure .65 by .49, .65 by .49, .65 by .48, and 63 by .48 inches.

A CONTRIBUTION TO THE LIFE HISTORY OF *PORZANA CINEREICEPS* LAWRENCE, WITH CRITICAL NOTES ON SOME OF ITS ALLIES.

BY CHARLES W. RICHMOND.

DURING a year's rambling in Nicaragua after natural history specimens in general, and birds in particular, I had many opportunities for observing this trim and neatly attired little bird in its home surroundings, not only through its abundance and perfect fearlessness, but also because the conditions favorable to its daily life existed on all sides. Upon landing at Greytown, our party cast about for lodgings convenient to the woods, and shortly decided upon a small house at the edge of town, where we spent the remainder of the day unpacking and arranging our extensive outfit. Next morning, February 1, 1892, the various members of the party sauntered forth to learn something of the surrounding country, and incidentally to collect anything of interest. My walk led me along a narrow, sandy roadway, flanked by impenetrable bushy thickets, with occasional open spaces and marshy spots, and branch paths leading to neighboring haciendas.

My first impressions of tropical bird-life were anything but satisfactory. There was no dearth of birds, but the thickets were so dense that without a machete it would have been impossible to reach them. With a single exception all the birds seen on this occasion belonged to families represented in North America by from six to nearly one hundred species. This scarcity of purely tropical forms was due mainly to the fact that

my trip did not include the heavy forest region, to which such forms are largely confined. Probably the most conspicuous birds noticed were the swarms of small black Seedeaters (*Sporophila corvina*) flying back and forth across the road and chasing one another about, all the while chanting in a low, monotonous strain. Small squads of Jew-birds (*Crotophaga sulcirostris*) wandered about in the open places, and occasionally a spiny-tailed *Synallaxis pudica* would announce its presence from a brush pile close at hand. In addition to the absence of birds of bright plumage and strange forms, such common United States species as the Summer Warbler and Catbird conspired to break down my picture of tropical bird-life. Hence I was not a little disappointed with my first experiences. There was a redeeming feature, however, in the great variety of strange bird voices heard on all sides. All of them were perfectly new to me, from the explosive bickerings of a diminutive Flycatcher (*Todirostrum cinereum*) near the roadside, to the long-drawn chucklings of the Ant-thrushes deeper in the thickets.

Passing a small pool on the edge of the thicket I was suddenly startled by aloud *Chir-r-r-r-r-r-r-r-r-r—rr—rr—rr*, uttered in a high-pitched strain, with two or three wavering syllables falling off at the end. Almost at the same instant I caught sight of the author, a small, brown Rail, who walked leisurely and carefully about near the edge of the water, not more than seven feet away, apparently not at all alarmed by my presence. Thinking that, Rail-like, it might disappear at any moment I shot it without making any further observations. It proved to be a male *Porzana cinereiceps* in perfect plumage. At the time, I thought the bird was somewhat out of place, surrounded by dense thickets with sandy roads leading here and there, and the nearest available marsh several hundred yards distant, but subsequent observations proved the bird to inhabit all situations where the necessary marshy places and water occurred, except in the heavy forests. The birds are, however, most partial to the grass-grown banks of the rivers and smaller streams.

The note of alarm, which first drew my attention to the species, is very characteristic and quite unlike the notes of any other birds of the lowlands of eastern Nicaragua. On becoming more

closely acquainted with the bird, I found the approach of any strange object, or sudden movement, or unusual noise was sufficient to call forth this rattling cry. It was apparently not only an alarm note, but one of communication as well. The birds did not appear to inhabit extensive swamps to any great degree, but preferred to follow the margins of the various water-courses, where ample shelter and food supply prevailed. On several occasions in December, I explored a large swamp in the rear of one of the banana plantations on the Escondido River, but did not see any of these birds, although one was heard on one of these excursions, and two old nests were found. To reach this swamp it was necessary to wade through mud knee deep for about three hundred yards, then, after crossing a short interval of water, to plunge at once into the tall grass and among the silico palms and mangroves (or mangrove-like trees), where the water was up to one's shoulders. It was easier in some places to scramble about on the roots of the mangroves above water, but more than enough for comfort, the dead roots would break, and with a tangling of trousers let a bare leg project down into the darkness below — a splendid target for tabobas and alligators. Imagine a collector floundering about in such a swamp, with tall grass and other plant forms rising several feet above the water, obscuring the surrounding country; a dense carpet of dead and decaying vegetable matter covering the surface, making progress in any direction next to impossible, especially with a gun, and withal, a hot, glaring, tropical sun beating down over everything. To these discomforts is to be added another: the sharp-pointed seeds of the grass overhead hanging down in large panicles, ready to drop at the least jar, and during the collector's progress falling in large quantities down his neck and back, causing much irritation. In the interests of truth I must add that neither tabobas nor other snakes were seen on these excursions; nor alligators, although there were said to be many of them inhabiting the place. If any Rails had been lurking in the vicinity at the times of my visits, they would undoubtedly have announced their presence under the influence of the disturbance created.

This species was pretty generally distributed along the water-courses visited by me, and was found to be particularly abundant

on the Escondido River in the vicinity of the 'I. P.' Company's plantation, its supposed greater abundance at this place being due, probably, to the fact that eight months' almost continuous collecting was carried on at this place. It was one of the characteristic birds here, but of course more frequently heard than seen. To take a canoe trip up the river or creek without seeing or hearing several would be a very unusual occurrence. It is possessed of considerable curiosity, and to this failing on its part I owe my series of over twenty specimens. Many more might have been obtained had I known at the time of its rarity in collections. Those collected were obtained more by chance than by systematic search. My plan was, usually, to take them on the return trip. Upon hearing a call from one of these birds, the boat would be allowed to drift slowly down stream, and the time employed in imitating the call, or in squeaking like a young bird, when almost invariably the Rail would appear in plain sight from its retreat in the fringe of grass close to the water's edge. If shot at and missed, the bird would not repeat its call, but 'chip' similar to the birds of the breeding season. Although their search for food usually led them through the thick grass, they were occasionally noted in full view on bare mud banks, within easy reach of shelter, however. One morning in the wet season, during an unusually heavy shower, we heard the call of a *Porzana* above the din produced by the rain falling on the corrugated iron roof of our dwelling, and from a window saw the little fellow running unconcernedly about on the planks constituting our wharf, occasionally hopping up on the gunwales of the dorys moored there, either to satisfy his curiosity or look for something to eat.

This bird rarely takes to flight, and but two or three times in my experience with it did I see it on the wing. It does not always attempt to escape capture by flight, even if hard pressed. One of the Spanish laborers on the plantation brought in a perfectly sound and healthy adult alive, which he had caught in the grass; two days later he caught another, and also a *Porzana exilis vagans* Ridgw., all of which were secured while endeavoring to escape through the grass. The single specimen obtained by Prof. Nutting at Los Sábalos[1], on the San Juan River, was taken

[1] Proc. U. S. Nat. Mus., VI, 1883, p. 408.

in the same manner. Specimens were occasionally found in traps set for small mammals along the river banks. These traps were baited with pieces of almost ripe banana, and unquestionably this fruit enters to some extent into its bill of fare, as it does into that of so many other species frequenting the plantations.

As the birds were found almost exclusively in the rank growth of tall grass on the banks of running streams, it was quite natural to think they should nest in the same places, but this did not prove to be the case.

My first nest was found May 15, and this date, I believe, marks about the commencement of the nesting season for this species. I had gone ashore early in the morning to inspect some traps set the evening before, and was returning through an open space, when a quivering of the grass in front attracted my eye. A short search revealed a globular, rather compactly made nest with an entrance in the side. It contained three eggs, apparently quite fresh. The nest was about a foot and a half from the ground, almost as high as the dense grass supporting it, and was constructed entirely of these grasses, and lined with broad leaves of the same material. The entrance was at the side, and, in this case, facing the river. The location of this nest was a grassy knoll on the edge of a lemon grove, about twenty yards from the river, and was the highest point in the neighborhood, being about forty or fifty feet above the river level. The identity of the proprietor of this nest with the little Rail did not occur to me at the time. I rather had in mind the new Meadowlark described by Mr. Ridgway a few years ago, from the eastern part of Honduras (not so very many miles away), and the resemblance of the eggs to those of a Meadowlark was quite striking. After marking the spot I withdrew, intending to return later for the eggs and get the parent bird if possible. The rainy season had begun about the first of May, and the weather was not all that a collector could desire. However, there was a period of fair weather late in the afternoon, so I went ashore again to look about, visiting a neighboring banana plantation and the lemon grove before mentioned. On this trip I found another nest similar to the one discovered in the morning. It was fully three hundred yards from the river, but adjacent to a ditch which had now become quite a respectable creek. This

nest contained no eggs, but had the appearance of a new one. Two Rails were seen in the vicinity of this nest and I then suspected they might be the proprietors. One of these birds was flushed by a dog which had followed me from a neighboring house, and flew a short distance just above the grass but soon dropped out of sight again. On my return to the river the first nest was again visited, but notwithstanding my cautious approach, a rustling of the grass told of the bird's escape. Early the following morning I approached the nest from the river side in order to command a view of the entrance, and was this time enabled to see the bird make its hasty exit and drop into the grass. There were still only three eggs in the nest, but supposing the bird to be as prolific as other members of its family in the north I left them undisturbed, hoping to return for them later. That afternoon we sailed up the river to the 'I. P.' plantation, where, in the course of several months a number of additional nests were found. Here the birds were very common, especially so along a large creek which followed a tortuous path through the plantation and entered the river at this point.

May 30 a nest was found containing five well incubated eggs. It was a grassy affair shaped like that of a Marsh Wren, but slightly larger, and lined with bits of broad-leaved grass. It was inhabited by a colony of stinging ants and was not saved. This nest was situated in a neglected, grass-grown part of the plantation, where the bananas had been to a large extent choked out. I did not see the bird leave the nest, but its 'chip' of disapproval was heard from the grass close by, and the eggs had evidently just been deserted. Thinking it might return to the nest I withdrew a short distance and stood for fully twenty minutes or more, but during this time the bird showed no disposition to revisit the nest. The 'chip' was repeated at short intervals, and from the indication of the sounds it appeared that the bird was moving about in various directions.

On July 18, after an all-day rain, I embraced the opportunity to take a short tramp through the plantation, late in the afternoon. On this occasion I found a nest of the *Porzana* close to a decaying log. It was, as usual, about a foot from the ground, but in the grass among the banana plants, differing in this last respect from

those found previously, which were in the open. I came upon this nest so suddenly that I was enabled to see the bird, as it hastily took its departure, run under the log. A few short squeaks on my part sufficed to bring the bird (or its mate, possibly,) out into plain sight. After shooting this one, which proved to be a male, another bird was heard chipping in the same place, but the most earnest squeaking failed to draw it out of hiding. The nest contained five eggs within a day or two of hatching. The last nest found by me was on August 26. This contained three somewhat incubated eggs. In construction and location it agreed very well with the others.

It did not occur to me at first why these birds located their nests on the higher ground, away from their usual haunts, but in July, at the height of the rainy season, we became accustomed to almost weekly floods in the river, the water sometimes rising fifteen or more feet in a single night. The Rails had learned the lesson of the floods and had placed their nests on high ground. Nests of the 'Red-rump' or 'Soldier-bird' (*Ramphocelus passerinii*) were occasionally found in the tall grass near the water, and these nests must necessarily have been destroyed by the first flood, but, while the Rails lived on the water's edge and knew the limit of high water, the Soldier-birds passed their time in the plantations and were less experienced in this respect. In flood time it was not unusual to find, some morning, that the quiet river of the night before had become a raging torrent, carrying uprooted trees, banana plants, huge mahogany logs, fugitive canoes, and everything that happened to be in its path, on to the sea. The current carried an unbroken string of smaller debris, composed of vines, bark, sticks, thousands of 'sea beans,' and other products of the forests, while each floating mass contained its freight of ants, spiders, tree frogs, and other forms of life.

The first immature bird seen was on June 22, when a full grown one was taken. Two days later a young one in the down was secured, and from this date on until September the young and immature birds were seen quite frequently. On the morning of July 20 while paddling up the creek, a 'chip' which I had learned to associate with the breeding birds attracted my attention, and on the bank close by saw an old bird accompanied by four downy

young only a few days old. The birds were walking gingerly about over a mat of dead grass and drift that had become lodged in a bend of the creek. With my advent upon the scene the parent manifested some little concern and sought shelter in a dense growth of bamboo close at hand from whence it tried to persuade the young to follow, but before they had fully made up their minds to do so I secured two of them, and might have obtained all had not the refractory nature of my dory prevented. These young birds uttered a subdued peeping note, similiar to that of a young chicken. Both the adult and the young had a habit of thrusting the head and neck in various directions, after the manner of a Pigeon, as if to obtain a better view of their surroundings.

The eggs of this species resemble very much in color those of the Virginia Rail (*Rallus virginianus*). They are pale creamy or buffy white with a slight gloss, spotted rather sparingly, but more thickly at the large end, with cinnamon-rufus and lavender. The longest egg in a series of twelve is 1.13 by 0.82 inches, the shortest 1.07 by 0.82 inches; the average is 1.09 by 0.83 inches. The nests are placed in the grass, about one foot from the ground, and are situated on ground above the normal high water mark. The breeding season extends from May to September, or during the rainy season, as far as my observations go. The full complement of eggs is from three to five.

The following note[1] on the egg of *Porzana albigularis*, a closely allied species, may be of interest: "Pale buff-white, sparsely spotted with small red spots, axis 1.1, diam. .9"; followed by a note by the collector, T. K. Salmon: "The nest is made of grass stalks and bents, and is round, with a side entrance, and placed amongst high grass and bushes in low swampy places, about two feet above the ground or water.—T. K. S."

In addition to the above notes on the habits, nests, and eggs of *Porzana cinereiceps*, the following descriptions and synonomy are added, with critical notes on other related species, and those of doubtful status.

An adult male (U. S. National Museum, No. 126286, Greytown,

[1] Scl. and Salv., P. Z. S., 1879, p. 546.

Nicaragua, Feb. 1, 1892, C. W. R.) agrees with the subjoined description: —

Back, scapulars, and wing-coverts, light bistre, passing gradually into clove brown on the rump and upper tail-coverts; tail and tertials almost black; primaries and secondaries similar to the back but slightly darker; under wing-coverts and axillars white, spotted somewhat obscurely with dusky, most pronounced at bend of wing and on under primary coverts. Top of head, including lores, cheeks, and malar region, slate gray; the brown of the back encroaching on the gray of the nape, and extending forward on the crown to a point almost between the eyes; throat dull white, varied on sides with pale vinaceous-cinnamon; breast vinaceous-cinnamon along median line, passing laterally into deep chestnut, darkest on sides of lower breast and on sides of neck, this color almost continuous over back of neck, there being only a narrow and indistinct dorsal line of bistre separating it; rest of lower parts white, barred with black, these black bars broadest and most conspicuous on the sides bordering the chestnut of the breast, becoming narrower towards the median line, and below on the flanks and under tail-coverts; tibia with still narrower blackish bars; some feathers of the under tail-coverts faintly tinged with chestnut; abdomen along median line white, without bars. Culmen, .70; wing, 2.82; tarsus, 1.10 inches. Iris, carmine; feet and legs, olive; bill, with a triangular apple green spot at base.

The above description will answer in a measure for all adults of this species, but individual variation is exhibited to a considerable degree, and it may be well to mention the chief differences. The most striking variation, perhaps, is in the amount of unmarked white on the breast and abdomen. In some examples this is very conspicuous, the white extending uninterruptedly from the throat to the lower tail-coverts, including the tibia. This feature appears to be due to age, and is to be noticed in specimens that have recently assumed the adult plumage. The type of *Porzana leucogastra* Ridgw. is one of this class. The several variations here mentioned, while to some extent to be accounted for by age, sex or season, are largely individual. A male bird shot July 18 is unusually white below. The head is dull gray, and there are traces of chestnut spots on one wing. It was one of the parents of a nest and five eggs.

The gray of the head is another character apparently dependent on the age of the bird, and is clearest and of greatest extent in the oldest birds. One apparently old adult, however, is without the gray on the head, this color being replaced by the umber

brown of more immature birds. In the younger adults the gray of the forehead, ear coverts, etc., is usually dull and much restricted, and sometimes entirely absent. The barring of the underparts varies considerably in different individuals, both in the width of the white interspaces and in the intensity of the black bars, but this is largely due to the condition of the plumage — whether fresh, or worn and faded — and is of little value for purposes of comparison. *Porzana alfari* Ridgw. is a specimen in fresh plumage without any line of unmarked white on the abdomen, but with deep black bars and narrow white interspaces. Two specimens of *P. albigularis* (Lawr.) in the National Museum Collection are, on the other hand, barred with dull brownish black, and at first sight appear to be quite distinct from the above specimen. A third example of *P. albigularis* from Frijole Station, Panama R. R., is heavily barred below with deep black, but the white interspaces are wider than in the specimen of *P. alfari*, otherwise it matches the latter very closely.

As to markings or bars on the wings, these may be due to sex; at any rate, in *P. cinereiceps* the two most strongly barred ones examined by me are females. These two birds have the lesser and middle wing-coverts well barred with white; some of the feathers have two bars, others only one; the feathers thus barred are almost black, and give the bird the appearance of having a black shoulder, barred with white. In a male of this species there are traces of white bars edged with chestnut on one wing, but no signs of bars on the other. Two other males have distinct spots of chestnut on the lesser and middle coverts. Of four specimens of *P. albigularis*, one has a few chestnut spots on each wing; one has slight chestnut spots on both sides, and a trace of white bars on one side; the third and fourth have both white and chestnut bars, without spots. In one of the latter examples (sex unknown), the barred feathers are not darker than usual. The specimen of *P. alfari* is entirely without bars of white, or chestnut spots.

A specimen of *P. melanophaia* (Vieill.) from Bahia has white bars on each wing. In a note on *Porzana albigularis* Messrs. Sclater and Salvin[1] write: "In these figures it will be noticed

[1] Exotic Ornithology, VII, 1868, p. 109, pl. lv.

that the wings are wholly unspotted, but it should be stated that one of the Panama skins shows black and white bars on the greater and lesser wing-coverts, and that a second has some traces of the same character. These markings would, however, probably disappear in the adult bird." In the birds examined by me it appears that immaturity cannot account for the presence of the wing bars, and two immature males before me are without any trace of them. It is probable, therefore, that age has nothing to do with this marking.

The under tail-coverts of *P. cinereiceps* are sometimes slightly tinged with rufous, thus showing its close relation to *P. melanophaia* of Brazil. One of the National Museum skins of *P. albigularis* also shows a trace of rufous on the under tail-coverts.

There is a slight difference in size between the sexes of *Porzana cinereiceps* which may be seen from the following table: —

Males:	Culmen.	Wing.	Tarsus.
	.70	2.82	1.10
	.73	2.90	1.26
	.71	2.85	1.21
	.71	2.83	1.17
	.71	2.95	1.19
	.65	2.75	1.10
	.70	2.95	1.19
	.70	—	1.15
	.75	2.83	1.19
	.70	2.75	1.20

Longest culmen, .75; longest wing, 2.95; longest tarsus, 1.26.
Shortest culmen, .65; shortest wing, 2.75; shortest tarsus, 1.10.
Average culmen, .70; average wing, 2.85; average tarsus, 1.17.

Females:	Culmen.	Wing.	Tarsus.
	.63	2.90	1.12
	.63	2.67	1.02
	.70	2.80	1.11
	.70	2.87	1.16
	.66	2.84	1.15
	.64	2.92	1.15
	.65	—	1.11

Longest culmen, .70; longest wing, 2.92; longest tarsus, 1.16.
Shortest culmen, .63; shortest wing, 2.67; shortest tarsus, 1.02.
Average culmen, .66; average wing, 2.83; average tarsus, 1.12.

The immature *P. cinereiceps* may be described as follows: —

(♂ im., U. S. National Museum, No. 128392, Escondido R., Nicaragua, Sept. 2, 1892, C. W. R.) Back, clove brown; rump, upper tail-coverts and tail, black; cervix, bistre, indistinctly edged with clove brown; pileum, smoke gray, edged with clove brown; cheeks, supra-auricular region, lores and sides of neck, light gray, rather broadly edged with a darker shade, giving to these parts a somewhat checkered appearance; throat, white, with the feathers of the sides narrowly tipped with dusky gray; breast dull grayish white, darker smoke gray on sides, the feathers with blackish tips, and an occasional chestnut feather; sides of neck similar, with individual chestnut feathers here and there; wings, similar to those of the adult but slightly darker; abdomen, white along median line, indistinctly barred with dusky black; sides, dull brownish black, narrowly barred with dull white, these bars nearly obsolete on flanks; tibia, smoke gray, with almost obsolete light bars; under tail-coverts dusky black with white bars. Wing, 2.90; culmen, .68; tail, 1.20; tarsus, 1.20 inches. Iris dark brown.

A young bird just leaving the downy stage (U. S. National Museum, No. 127052, ♀ juv., Escondido R., Nicaragua, June 24, 1892, C. W. R.) is shiny greenish black, duller below, with a grayish tinge on the abdomen. Feathers of the immature plumage are making their appearance in patches in various places. In this stage the breast is gray, the feathers broadly edged with dull black; abdomen similar, with a buffy wash; tibia drab gray; no white bars apparent anywhere on the under parts.

I am unable to say how long the birds remain in immature plumage before donning that of the adult, but as no immature birds were noted during the early spring months, it seems reasonable to suppose that they make the change sometime during the winter.

Moulting appears to take place slowly. Two specimens taken September 8 possess half-grown new primaries, and pin feathers occur on various parts of the body. Other birds in moulting condition were taken May 20, July 18, etc., showing it to extend over several months. It is probable that, in common with most other species of this region, the moult takes place during the rainy season, — from May to December.

As to the status of *Porzana leucogastra* Ridgw., and *P. alfari* Ridgw., I think there can be no doubt that the former should be placed under *P. cinereiceps*. As to *P. alfari*, it is very difficult to attempt a satisfactory disposition of the single specimen. Its brown head would indicate a position under *P. albigularis*, but

there are slight traces of gray on the lores, auriculars, and under the eyes, so that it may be after all only a *P. cinereiceps* without the normal amount of gray on the head. The locality of its capture, Las Trojas, Costa Rica, is, as I am informed by Mr. Geo. K. Cherrie, near San Mateo, in the neighborhood of the Gulf of Nicoya, on the Pacific coast. It is, then, nearer (if not actually within) the habitat of *P. cinereiceps* than of *P. albigularis*. An examination of the bird without reference to its locality would lead one to place it with *P. albigularis*, from its apparently adult plumage (*i. e.*, brown head combined with heavy black-barred underparts), rather than with *P. cinereiceps*, although, as before stated, some apparently old adults of the latter species have very little gray on the head, while as a rule the younger ones combine this character with very light underparts.

In the synonomy at the end of this paper I have placed the references to this bird under *P. cinereiceps*.

Dr. R. Bowdler Sharpe[1] considers *Porzana cinereiceps* to be only a subspecies of *P. albigularis*, and so it may finally prove to be, but before this point can be settled, it will be necessary to examine birds from the region between Panama and Costa Rica, and such material is not at present to be had. It may be said here that the type of *P. cinereiceps*, collected by Prof. W. M. Gabb, and said to be from Talamanca, Costa Rica, is identical with some specimens from the Escondido River, Nicaragua, and is, in fact, *typical* of *P. cinereiceps*, although Talamanca is not so very far from Chiriqui and Veragua, where the other species or intermediates might be expected to occur.

The synonomy of *Porzana cinereiceps* is so mixed up with that of *P. albigularis* that it may be well to give a tolerably complete list of references to each, which will be found below.

Porzana albigularis (*Lawr.*).

Corethrura albigularis LAWR. Ann. Lyc. N. Y. VII, 1861, p. 302 [*Panama*]. — SCL. & SALV. P. Z. S. 1864, p. 372 (part).

Porzana albigularis SCL. & SALV. Ex. Orn. 1868, p. 109, pl. 55 (part); P. Z. S. 1868, p. 454 (part); N. Av. Neotrop. 1873, p. 140 (part); P. Z. S.

[1] Cat. Bds. B. M., XXIII, 1894, p. 337.

1879, p. 546 [*Remedios, Colombia*]. — RIDGW. Proc. U. S. Nat. Mus. IV, 1881, p. 201 (part); *ibid.*, VI, 1883, p. 409 (note); *ibid.*, X, 1887, p. 111.

Aramides (*Laterallus*) *albigularis* G. R. GRAY, Hand-List Bds. 1871, p. 61, no. 10,442 (part).

Creciscus albigularis SHARPE, Cat. Bds. B. M. XXIII, 1894, p. 140 (part).

Porzana cinereiceps *Lawr.*

Corethrura albigularis SCL. & SALV. P. Z. S. 1864, p. 372 (part).

Porzana albigularis SCL. & SALV. P. Z. S. 1867, p. 280 [*Bluefields River, Nic.*]; Ex. Orn. 1868, p. 109 (part); P. Z. S. 1868, p. 454 (part). — LAWR. Ann. Lyc. N. Y. 1868, p. 142 [*Gulf Nicoya, C. R.*]. — SCL. & SALV. N. Av. Neotrop. 1873, p. 140 (part). — RIDGW. Proc. U. S. Nat. Mus. IV, 1881, p. 201 (part). — ZELEDON, Proc. U. S. Nat. Mus. VIII, 1885, p. 114; An. Mus. Nac. C. R. I, 1887, p. 131.

Aramides (*Laterallus*) *albigularis* G. R. GRAY, Hand-List Bds. 1871, p. 61, no. 10,442 (part).

Creciscus albigularis SHARPE, Cat. Bds. B. M. XXIII, 1894, p. 140, (part).

Porzana cinereiceps LAWR. Ann. Lyc. N. Y. XI, 1875, p. 90 [*Talamanca, C. R.*]. — RIDGW. Proc. U. S. Nat. Mus. I, 1878, p. 252; *ibid.*, VI, 1883, p. 409; *ibid.*, X, 1887, p. 111. — ZELEDON, Proc. U. S. Nat. Mus. VIII, 1885, p. 114; An. Mus. Nac. C. R. I, 1887, p. 131 [*Pacuare, C. R.*]. — RICHM. Proc. U. S. Nat. Mus. XVI, 1893, p. 528 [*Rio Frio, C. R.; Greytown*, and *Escondido R., Nic.*].

Creciscus cinereiceps SHARPE, Cat. Bds. B. M. XXIII, 1894, p. 141 (note), p. 337.

Porzana leucogastra RIDGW. Proc. U. S. Nat. Mus. VI, 1883, p. 408 [*Los Sábalos, Nic.*]; *ibid.*, X, 1887, p. 111.

Creciscus leucogaster SHARPE, Cat. Bds. B. M. XXIII, 1894, p. 140 (note).

Porzana alfari RIDGW. Proc. U. S. Nat. Mus. X, 1887, p. 111 [*Las Trojas, C. R.*]. — ZELEDON, An. Mus. Nac. C. R. I, 1887, p. 131.

Creciscus alfara SHARPE, Cat. Bds. B. M. XXIII, 1894, p. 141 (note).

THE TERNS OF MUSKEGET ISLAND, MASSACHUSETTS.

BY GEORGE H. MACKAY.

MUSKEGET ISLAND lies south of Cape Cod, and is situated in the southern portion of Nantucket Sound. It is about five miles southeast of Martha's Vineyard, and forms the westernmost of the

group of which Nantucket and Tuckernuck are a part. Its first recorded transfer that I am aware of, subsequent to the original deed of Lord Sterling in 1641, to Thomas Mayhew and his son Thomas, is in an old deed dated July 20, 1692, wherein it is described as "Mooskei-a-kit, the westernmost of the islands commonly called Sturgeon Islands," and conveyed by Matthew Mayhew of Martha's Vineyard to six men. These, on February 20, 1693, deeded one-seventh to still another, making him an equal partner, he having originally joined them in the purchase, but his name does not appear in the deed from Mayhew. Each had equal undivided rights in the whole island. This undivided condition exists up to the present time. Two hundred years has, however, so obliterated its ownership that the recorded evidence of title at this time only shows three twenty-eighths. Two of these are the property of a certain shooting club, the other belongs to the writer.

The island is scarcely more than a large sand shoal, portions of which are annually changing, owing to the action of the ocean, which some years ago severed it in two places on the south and west sides, thus forming two other small islands (Adams and South Point Island or Shoal) in addition to the present main island called Muskeget. These all come under the head of and are a part of Muskeget Island. The adjacent waters are very shallow, in a portion of which the eel-grass (*Zostera marina*) grows abundantly, where the pipe fish (*Siphonostoma fuscum*) makes its habitat, and on which the Terns depend to a considerable extent for food. According to Prof. N. S. Shaler (Geology of Nantucket) Muskeget Island is a postglacial deposit, being composed entirely of sand. Consequently there is but little verdure, running ivy (*Rhus radicans*) and sand reed or beach grass (*Ammophila arundinacea*) predominating. Here and there are clumps of beach plum bushes (*Prunus maritima*), which constitute the loftiest foliage of the island. Mosses and lichens are noticeable, — *Usnea barbata*, *Cladonia rangiferina*, *Cladonia boryi*, and *Cladonia cristatella*.[1]

The main island of Muskeget runs east by south and west by north. It is about one mile and a quarter long (not including the

[1] I am indebted to Miss M. E. Carter of the Boston Society of Natural History for the identification of the above.

strip of sand known as South Point), and a little over a quarter of a mile wide at its greatest width, narrowing to a few hundred feet towards the western end. According to local testimony it was formerly of greater extent. Its greatest elevation is apparently not over a dozen feet above the surrounding water. Its surface is wind riven and undulating. There are about a dozen shanties on the main island, and a few on Adams Island, which are used at infrequent intervals by shooting and fishing parties; otherwise it is uninhabited. In close proximity on the south is Gravelly Island, and outside of all on the southwest is the South Beach, which serves as a barrier to the ocean on this side.

As it is of the Terns breeding on these smaller islands (Adams Island excepted), and also on what is now called Muskeget Island proper, that I propose to speak, I have deemed it advisable to particularize them, as I shall later on have occasion to refer to each island separately.

The Terns which frequent and become domiciled in this locality are Wilson's (*Sterna hirundo*), the Roseate (*Sterna dougalli*), Arctic (*Sterna paradisæa*), and a few Least (*Sterna antillarum*). To see them all here on their breeding grounds, the most extensive on this coast, in such countless numbers that estimates of them are vain, together with the thousands of their nests and eggs, cannot fail to create in the mind of the ornithological student a profound and most lasting impression. It is the first two of these species to which I would particularly call attention. Since the earliest recollection, they have been returning year after year to Muskeget to breed, and it is here that I have especially observed them. My attention the present year has been more than usually directed to them from the fact that a vigorous effort had been made by a number of the inhabitants of the adjacent islands, Nantucket and Tuckernuck, especially the latter, to obtain a repeal of the present law for their protection, in order to give these people the right to take the eggs for *food purposes* during the month of June (the breeding period). Having taken an active part with some friends in the birds' defense, the objectionable petition was not granted, and the satisfaction I have taken the past summer in seeing the results amply compensates me for the part I took in the matter; for they have not been so numerous or in so flourishing a condition, nor their eggs so abundant for many years.

As far as I am aware *Sterna hirundo* and *S. dougalli* first make their appearance in Muskeget waters any time after the first week in May, and they are remarkably constant in the time of appearing. In 1892 they arrived on May 10, in flocks of fifty or more, drifting sideways before a heavy southeast rain-storm. In 1893 they arrived on May 8, with light air from the west-northwest and clear weather. Twenty were first observed hovering over South Point, Muskeget Island, very high in the air; about five o'clock P. M. two were observed to come quite low down. The next day they were arriving in considerable numbers, flying high during the day time and settling down after sunset. The weather was clear with a light southwest wind. On the 10th, at sunrise, the Wilson's and Roseate Terns were rising in very large numbers from the northern-middle part of Muskeget proper, the weather being clear with a strong southwest wind. On the 11th they continued to increase; there was a strong southwest gale during the night, dying out in the forenoon. On May 19, 1893, I took a walk over Muskeget proper to ascertain how they were laying, as I also did the next day over Gravelly Island, Mr. John R. Sandsbury, who was charged with seeing that the law is maintained in regard to the birds and eggs, being with me. I did not visit South Point, nor South Point Island. On Muskeget proper we found 238 nests, 9 of which contained one egg each; 121 had two eggs each; 94 three eggs each; 10 four eggs each; and 4 five eggs each. On Gravelly Island we found 145 nests, 5 of which contained one egg each; 59 two eggs each; 74 three eggs each; and 7 contained four each. No nest with five eggs was observed. The birds here were mostly Roseates; those on Muskeget proper were largely Wilson's, with a good many Roseates among them. On Gravelly Island there is an unoccupied house and I found one nest of three eggs within eighteen feet, and another also containing three eggs within fifty-one feet of it. Only eight chicks and two chipped eggs were observed.

As a rule there was no regularity in the way the eggs rested in the nests. Of those containing three eggs the larger percentage seemed to be two eggs with the smaller ends towards the centre of the nest, the other lying crosswise. I found considerable

variation in color, size, shape and markings of the eggs, and I failed to detect any constant feature whereby they could be invariably distinguished.

I visited Muskeget again on July 3, and with a friend walked over the same ground that I did on June 20. I found about eighty-five per cent. of all the eggs hatched, and the chicks running about everywhere. I took from the mouth of a chick, from which it was protruding, a pipe fish (*Siphonostoma fuscum*)[1] four inches long. The bird was still too young to leave the nest. They also eat a kind of sea-worm, round in shape and of irregular diameter, and about four inches in length, resembling an earth-worm. I regret that the only specimen which I saved was destroyed before indentification. It was probably "one of the Sipunculoids, *Phascolosoma* sp.?" The old birds remain until incubation is over and the young are able to fly and care for themselves, when some of them leave, others remain in these waters until the middle of October. On October 9, 1893, large numbers were observed resting on the water in detached groups of a dozen to thirty or forty birds, extending from Tuckernuck Shoals to East Chop, Martha's Vineyard. On the 16th the same thing was again noted. They were probably preparing to migrate. At such times they collect on the sand bars and points until a large number are together, when they all rise and continue to circle, going higher and higher until lost to view.

I have heard of but two instances of these Terns being captured here during the winter; namely, on February 20, 1891, Mr. Vinal N. Edwards shot a Wilson's Tern in immature plumage, in Woods Hole harbor, Mass., the only one seen at the time. Again at the same place on January 17, 1894, he shot another, which had been frequenting the harbor for about a week previous. The skin of this bird is now in the U. S. Fish Commission collection, Woods Hole, Mass.; that of the former I think is in the Smithsonian collection, Washington. They are not often seen resting *on* the water, prefering to rest on their breeding ground on the upland or on the sand beaches and bars, or occasionally on

[1] I am indebted to Mr. Samuel Henshaw of the Boston Society of Natural History for the indentification.

buoys, stakes, etc. They especially delight to be in the air. Their plumage is immaculate, for they are constantly washing themselves. I have yet to see one with soiled plumage. When fishing they arrest their flight suddenly, and maintaining their poise with repeated movements of the wings, look sharply for their finny prey beneath the surface of the water. When it is perceived, the wings are quickly closed, and with a rapid rush they dart headlong from their elevated position into the water, completely immersing themselves, if the fish is sufficiently deep to render it necessary. They reappear almost immediately with the fish held crosswise in the bill, and with a shake of their feathers continue on their way. Their principal food appears to consist of small fry, as lance, pipe fish, etc.

On May 5 and 6, 1894, the wind was strong southwest, and foggy, clearing on the afternoon of the 7th. The 8th was moderate, with southwest wind and foggy. This morning the Terns were observed for the first time this season to be quite numerous, having arrived during the night. At sunrise on the 9th they were abundant, hovering high up over Muskeget proper. The weather was fine, the wind N. N. W., moderate ; partly cloudy. On the 10th at sunrise there were large numbers, as was evidenced by their rising in flocks of two to three hundred from the middle northern part of Muskeget proper. On the 11th a large number were noticed resting on the sand beach on the north side of the island. On the 19th and 20th they were hovering over the island in *thousands ;* on the latter date a strong easterly gale prevailed, which continued during the next day.

In response to my request Mr. John R. Sandsbury walked over a portion of the breeding grounds on Muskeget proper on the 21st, and discovered three fresh eggs, — the first noted this season, and quite an early date to find them. On the 28th he walked in a direct line from his house to the north shore of the island. On his way he saw 4 nests with three eggs each, 16 nests with two eggs each, and 10 nests with each one egg. On June 2 he repeated the walk taken on May 28th, finding 24 nests with one egg, 25 nests with two eggs, 19 nests with three eggs, 2 nests with four eggs, and 1 nest with five eggs. On the morning of June 15 he again took the same walk, only a little more to the westward,

and found 57 nests of three eggs, 31 nests of two eggs, 19 nests of one egg, and 6 nests with four eggs. He saw two chicks to-day, the *first* noted this season.

On this same afternoon (June 15, 1894), I commenced an exhaustive survey of *all* the breeding grounds. To more fully explain the situation of these on Muskeget Island proper (excepting South Point), permit me to state that there is an ancient shore-line near the centre of the island, which is now nearly one-eighth of a mile from the ocean. I perceived several years ago that all accretions to the main island had been added to the northern side, and on examination also found that there were three other similar and distinct shore-lines between the central one and the ocean. These ridges form the most elevated portion of the island, and run through its entire length. They are composed of whitish sand, bare in many places, but in others covered with a scant growth of beach grass and running ivy. The Wilson's and Roseate Terns have selected these ridges, with their slopes and valleys, for their breeding grounds, all other portions of the main island, with the exception of the South Point, being little used by them for this purpose. It is to this particular section that I allude when describing Mr. Sandsbury's walks, as also in giving the results of my own observations on Muskeget proper, always, however, excepting the South Point, which will be described separately. The results of investigations made on June 15 and 16, 1894, with the aid of Mr. Sandsbury, in discovering the nests, I have tabulated in the following condensed form, giving a summary of the nests and eggs found on those dates in each place visited.

	Nests.	*Eggs.*	*Chicks.*	*Chipped Eggs.*
June 15, 1894, Muskeget Island proper.	363	970	14	4
" 16, " South Point, Muskeget Island.	348	943	2	2
" " " South Point Island.	266	703	3	none
" " " Gravelly Island.	268	753	1	none
" " " South Beach.	9	20	none	none
Total.	1254	3389	20	6

Of the above nests on Muskeget Island proper, the birds being mostly Wilson's Terns, with more or less Roseate Terns, 35

contained one egg each, 83 contained two eggs each, 222 contained three eggs each, 12 contained four eggs each, and 11 contained five eggs each. On South Point, Muskeget Island, the birds being Roseates and Wilson's intermingled, 19 nests contained each one egg; 87, two eggs; 224, three eggs; 14, four eggs; 5, five eggs. On South Point Island, the birds being Roseates and Wilson's intermingled, 27 nests contained each one egg; 57, two eggs; 169, three eggs; 10, four eggs, and 3 contained five eggs each. On Gravelly Island, the birds, as far as I was able to determine, being exclusively Roseate Terns, 12 nests contained each one egg; 44, two eggs; 197, three eggs; 13, four eggs; and 2, five eggs. At South Beach, the birds I was able to identify were Roseate and Wilson's Terns. I am not sufficiently certain about the Arctic to say anything definitely, but think they were here also. I did not observe any nest here with one egg, but found 7 nests with two eggs, 2 with three eggs; no nests with either four or five eggs were discovered.

On July 1 and 2, 1894, I again, with Mr. Sandsbury, went over *all* of the above mentioned grounds, and following will be found the summary of the results.

	Nests.	*Eggs.*	*Dead Chicks.*
July 1, 1894, Muskeget Island proper.	106	206	182
" 2, " South Point, Muskeget Island.	51	99	72
" " " South Point Island.	72	144	33
" " " Gravelly Island.	106	226	20
" " " South Beach.	10	17	none
Total,	345	692	307

Of the above nests on Muskeget Island proper, 38 contained each one egg; 41, two eggs; 24, three eggs; 1 contained four eggs; and 2 contained five eggs each. On South Point, Muskeget Island, 19 nests contained each one egg; 20, each two eggs; 10, three eggs; 2, five eggs; no nest with four eggs was observed. On South Point Island, 24 nests contained each one egg; 29 had each two eggs; 15, each three eggs; and 1 nest contained five eggs. No nest with four eggs was observed. On Gravelly Island, 28 nests contained each one egg; 42 nests contained each two eggs; 31 contained each three eggs; 4 contained each four eggs,

and 1 contained five eggs. On South Beach, 4 nests contained one egg; 5 contained two eggs; 1 contained three eggs. No nests containing four or five eggs respectively were observed.

By a comparison with the former summary it will be seen that 80 per cent. of the June 15 and 16 eggs were hatched by July 1 and 2. The difference in the number of eggs observed in 1893 and 1894 may be accounted for by the fact that I did not visit South Point or South Point Island in the former year; nor was the search so exhaustive as in the latter year. There are also *many more* Terns this year (1894) than in 1893.

I found my impressions of 1893 regarding the manner in which the eggs rested in the nest verified, there being no regularity except as heretofore stated.

In order to arrive at a better identification of the eggs of the Roseate and Wilson's Terns, I gathered a large series (one hundred and fifty) on Gravelly Island, which seemed this year to be exclusively occupied, as far as I could judge, by the Roseate Terns; and I also investigated most carefully the eggs in nearly every nest found on that island. As a rule the eggs of the Roseate Tern have greater cubical contents than those of Wilson's Tern, being longer and tapering gradually to the smaller end. This, however, is not always the case, some being smaller than others, and some taper quite abruptly. Some are covered all over with small, irregular brownish marks, others have very small spots of brownish on a dirty white ground, as also on a coffee-colored ground; some have scarcely any spots on a dull white ground; occasionally one is seen of a greenish ground color; some are splashed all over with large brown spots, others with the spots barely showing through the surface, as it were; occasionally one is seen which is very large at the greater end, tapering suddenly towards the smaller. They are almost invariably well covered all over with irregular marks or spots of brownish color. There are some eggs which have a ring of brown spots blended together around the larger end, somewhat similar to some eggs of *Sterna hirundo*, while on others the brownish spots intermingle at the larger end, thus making it the most prominently marked portion of the egg. I have also noted a few of an oval-round shape. I have one egg which is covered with small, pale purple spots.

They also vary more or less in length. The larger clutches of four and five eggs generally vary in a striking manner, and this holds good in a less degree down to two eggs in a nest. I saw, however, in 1893, and also in 1894, several sets of five eggs each which were very much alike, both in size and color. Therefore, while there are many typical eggs which can be easily recognized, there are others which cannot always be distinguished from the eggs of *Sterna hirundo* or of *S. paradisæa.*

It is hence extremely difficult to absolutely identify all of them as they rest in the nest in such a haunt as I am describing, for aside from the fact of their laying in each other's nests, just before the pedestrian reaches the location where the nests commence he is surrounded by a countless screaming horde of bold assailants, who contest every step as an invasion of their precincts. The alarm is given from bird to bird, until it reaches those at the farthest end, who hasten to lend their vocal aid in driving off their common enemy, thus rendering it impossible to come to any conclusion regarding any particular nest and eggs. I have had Roseates dart down at me, and show every demonstration of anger and solicitude, when I have been examining a Wilson's Tern's nest and eggs, the identification of which I felt sure. I have also had the same experience with Wilson's Tern as the assailant, when I have been busy over a Roseate's nest and eggs. It must not therefore always be assumed that the solicitous bird is the owner. As far as my observation shows, I should say that not only do Roseate and Wilson's Terns lay their eggs indiscriminately at times in each other's nests, but also care for each other's young, and make united battle against intruders. It is for such reasons, and others of a similar character, that prevents me from speaking with greater certainty regarding some of their breeding habits. I am of the opinion that three eggs constitute the full complement for a female, and when more than that number are found in a nest, they have been deposited by more than one bird.

My attention the past two seasons having been attracted to *single* eggs resting on the bare, soft sand, without any semblance of a nest or footprints near them, I was puzzled to know how to account for it, such eggs having an unmistakable appearance of

being deserted. Those found last year in July were of a paler color than those in the nests, and had a bleached look. Those I found this season on June 15 and 16 were normal and did not have the bleached look. One day while sitting in the house on Muskeget, Mrs. Sandsbury, who was outside, called to me to come out. Responding to her call, she informed me that she had just seen a Tern drop an egg in mid air, while flying past within ten yards. As it fell on the hard sand beach it was broken, so I only saw the remains, but the incident served to solve to my satisfaction the riddle of the *single* egg. Mr. Sandsbury then informed me that he also had seen a Tern drop an egg this year as the bird flew past him. I offer the following in explanation. Here is a haunt where immense numbers of Terns are breeding. Out of the number an occasional bird fails to reach her nest in time to deposit her egg. Unable to retain it longer, it is dropped in mid air. Should it happen to fall in soft sand (it is invariably in such places that I have found them), from not too great an elevation, it remains unbroken and becomes bleached by the sun. Eggs which fall on harder ground, or from a greater height, are of course broken. I have one specimen a little indented, with the sand still adhering to the fractured part, where a little of its contents had oozed out. I found about a dozen such eggs on June 15 and 16, 1894, of which I saved six. They are all Roseate's eggs, and of the usual fresh color, undoubtedly having been recently dropped. On breaking one purposely, I found it to be particularly fresh. Those found last year on July 3 and 4 were probably old, and consequently bleached.

I have remarked that all the Terns in this locality construct their nests so that they shall harmonize with the surroundings. Nests placed on the beach are usually constructed of eel-grass (*Zostera marina*) or the eggs rest in a hollow made in the sand, without anything around them. On the higher ground they are composed of beach grass, or little sticks and stalks. To me they show a method in their apparent carelessness. Few of them, however, deserve the name of nest; usually there is little attempt at concealment, and they seem to like to place them in some spot from which there is a good lookout. They are often placed on top of the windrow of eel-grass washed ashore on the beach, close

to the water's edge. As far as I have observed neither the Roseate nor Wilson's Terns alight *on* the nest, but always several yards away from it, and then walk to it. They also walk away from it before flying. The repeated imprints of their little feet upon the sand have many times directed me to their eggs. They are quite active when on the ground, and can be daily seen on the sand, walking about in the vicinity of their nests.

I do not think the Roseate or Wilson's Terns lay as a rule more than one set of eggs. Should they lose them through accident or otherwise, it is probable they would lay again the same season, if not too late.

The eggs of Wilson's Tern are smaller, as a rule, than those of the Roseate, and they are shorter, and more blunt at the smaller end, yet some are not so. They vary in color and markings, as do those of the Roseate, but I think not so much so in size and shape. Some eggs have a coffee-colored ground with irregular brown spots all over the egg; others have them only at the larger end, where often they are merged in a ring, with the rest of the egg without spots or with very few. They do not often have the small irregular brown marks so characteristic of the Roseate's eggs, yet some eggs look so much like some Roseate's as to be with difficulty distinguished from them.

I have not had sufficient experience with the Arctic Terns to write very much regarding them. As far as I know, their habits and food in this locality are the same as those of the Roseate and Wilson's Terns. They are said to breed in small numbers on the South Beach, on the southwest side of Muskeget Island, which, I believe, is their southernmost breeding limit. I have never collected any eggs here that I felt sure were those of this species. They resemble the eggs of Wilson's Tern so closely that it is nearly impossible to distinguish them, and there is a very close resemblance between the birds themselves when flying. I have seen Wilson's Terns with breasts as dark as some Arctics, and the difference in their bills can be seen only at close range. I have seen but few of their identified eggs, and these I was unable to distinguish from those of *S. hirundo.*

When Mr. Sandsbury took up his residence for the season of 1894 on Muskeget Island, on May 4, he noted about one hundred

Least Terns hovering around South Point, Muskeget Island proper. On the arrival of the Roseate's and Wilson's, they seemed to have departed, for they were no longer observed. They are said to be the first Terns to appear here in the spring and to always leave when the other Terns arrive. They do not lay on the uplands in this locality, as do the Wilson's and Roseates, but usually along the beaches. They lay from two to three eggs. On June 16, 1894, one nest containing three eggs was found on the South Point of Muskeget Island. It was placed a few feet from the edge of the low bank, which divided the upland from the beach on the ocean side, at the foot of a bunch of beach grass, and partially concealed. The eggs were not quite half the size of those of the Wilson's Tern, and were nearly equally covered over with very fine brownish spots on a pale buff ground. They are said to breed in small numbers on the sandy point at the southeast end of Tuckernuck Island, and formerly on Smith's Island (now washed away), south of Tuckernuck Island. I am informed by an old resident that they were sometimes called 'Oyts,' from a resemblance of one of their notes to the sound of this word, and that formerly they were much more abundant than at the present time. Not having particularly observed them recently, I cannot speak with confidence in regard to them. I am, however, inclined to regard the nest above mentioned as accidental, it being the first I have known here.

In considering the chicks in the down of *S. hirundo* and *S. dougalli*, I have been somewhat puzzled regarding their identity, and am unable to speak of them with certainty. One has a black throat, white breast and abdomen, the entire upper parts, including the top of the head, being of a pale yellowish gray, intermixed with small irregular black marks; the feet, legs and bill are of a reddish yellow, except the tip of the latter, which is blackish brown. The other chick has the entire upper parts, including the top of the head, of a rather more decided gray than the other, and rather less of the yellowish tinge, with black and brown markings intermixed. The throat is blackish, and the feet, legs and bill are flesh color, with the tip of the latter blackish brown. As this chick advances in age, the upper mandible becomes brownish black, while the lower still retains the

flesh color nearly to the tip, which is brownish black. When a few days old they are somewhat similar in general appearance; both have blackish throats, but the throat of the reddish-legged chick is decidedly blacker than that of the other. As I have often seen the reddish-legged chicks in what I call Roseate's nests, with unhatched Roseate's eggs beside them, and the same day seen a similar chick crouched beneath the breast of a Wilson's Tern, it will be understood why I am not prepared to speak more definitely.

I have frequently heard the chick peep while in the shell prior to its being chipped. At such times the chick is doubled up, with the head between the legs at the larger end of the egg. On carefully breaking open such eggs the chick instantly opened its eyes. I have also watched the process of the chipping of the egg while the chick was endeavoring to release itself. This process is slow and laborious. As soon as a small hole is pierced a little to one side of the larger end of the egg with the bill, which is provided with a little hard white knob at its point, the chick seizes hold of, and bends back and forth, a minute fragment of the shell until it is detached. This effort is continued for only a few seconds at a time, and must be repeated a number of times before the fragment is broken off. The labor seems exhausting, the chick panting while resting after each effort. In a few seconds later the attempt is again renewed, and so on until its release is effected, and a wet little chick appears. As soon as it is able to run it leaves the nest, and its first instinct is to hide. A few blades of grass or a leaf is sufficient for the purpose; provided its head is partially covered it will not move, no matter how closely it is approached.

During this early period of their existence, and while in the nest, they suffer considerably from the attacks of a small, red ant, which is numerous on Muskeget Island proper, including South Point. These ants get on them in numbers, and by an incessant biting and pulling at their wet down, with accompanying worriment, cause the death of many of them. I have stated in a previous part of this article the number of dead chicks I found; but they doubtless represent but a part of the whole number. As there had been no inclement weather in the neighborhood since

these chicks were hatched, I am inclined to attribute more or less of this mortality to these ants. My record shows that 307 dead chicks were found on July 1 and 2, 1894.

This year the Terns left this vicinity earlier than usual, large numbers having departed by September 1. Should one desire to see them in all their glory, it would be well to visit them about the first of July and walk out among them at sunrise or at sunset. The former is the better time, for then they are preparing to depart for the 'rips' for food, many of them going long distances. While making a passage to Nantucket I have often observed them when it was nearly dark, when flocks of a few to fifty would be flying close to the water, all headed for Muskeget. It is when among them at their breeding grounds that their wonderful aërial movements can be best observed. Some of them are very bold and fearless, especially the beautiful Roseates, when guarding their eggs or young. The roseate tint on their breasts, so noticeable in the spring, vanishes after death. Beautiful and graceful, who can view them without feelings of admiration and delight? Thick fog does not seem to disturb them, and the local boatmen can usually tell under such conditions how Muskeget Island bears by watching the course of these birds. They also direct the fishermen to where the schools of bluefish are feeding, by hovering over the school, and darting down after the small fish which the bluefish have driven to the surface. Yet these men have but recently sought to appropriate their eggs by wholesale, during their laying period, the result of which would be the breaking up of their haunt, reducing their numbers, and driving them from these waters.

I cannot refrain from describing one Tern's nest containing two eggs which I found on the South Beach, June 16, 1894, as it was different from any I have ever before seen. It was but a hollow in the beach sand, about thirty yards from the water. The floor of this hollow was lined with small, flat stones about half an inch across, and smooth, their upper surfaces being on a level. I examined it critically, in order to ascertain if it were accidental or artificially constructed. My conclusion was that the stones had been brought and placed in position by the owner of the nest. I was careful to examine the immediate surroundings

to see if any such result could possibly be produced by the blowing away of the sand, and decided it would be impossible. I then called up Mr. Sandsbury, who was near at hand, and asked him his opinion without expressing my own; as he agreed with me in every particular I considered the circumstance worth recording. As I knew of no way then of taking it, as it was in place, I left it until my next visit, July 2, when I went after it with the proper appliances to preserve it. This time, however, I failed to find it, the eggs having probably been hatched in the mean time and the loose sand had blown over and covered it up.

Although my remarks have already reached considerable length I would beg to add a few words regarding the colony of Laughing Gulls (*Larus atricilla*) inhabiting Muskeget Island proper (see Auk, Vol. X, p. 333). I visited it on June 15 and July 1, 1894, finding it in the most flourishing condition. Their number had nearly doubled, as nearly as I could judge, since last year. They were nesting a few hundred yards west of where they were last year, on the northern side of the island. On June 15 I found fifteen nests containing forty-one eggs, of which, four nests contained two eggs each, and eleven nests three eggs each. I noted one egg which was pale olive brown, practically unspotted. These nests were in tall beach grass, and placed in the middle of a narrow path or alley, where the grass had been trodden down by the birds in going in and out. They apparently do not turn around to go out the way they enter, the passage being too narrow to permit of it, without disarranging their plumage. All the bare knolls of sand in the immediate vicinity of the colony had been much used by them as resting places. They are extremely gregarious in this breeding haunt, which is not more than one hundred yards in diameter, and their nests are at times placed within a few feet of each other. They are apparently on the best of terms with their neighbors, the Roseate and Wilson's Terns, whose breeding grounds adjoin and encroach on theirs, and with whom they intermingle. When I again visited them on July 1, I found most of the eggs hatched and the young chicks in the grass. I found, however, two nests with one egg each, and six nests with two eggs each. The chicks in the down have the entire upper parts grayish, with a yellowish tinge, intermixed with

black. The top of the head is pale yellowish, irregularly spotted with black; abdomen grayish; throat light reddish yellow; breast whitish. The legs are reddish chocolate, as also the bill at the base, the tip being a pale flesh color, and very blunt, having the appearance of being cut off squarely. While handling one of the chicks from which this description was taken it twice ejected considerable portions of a soft shelled crab. Another nest, containing one egg and two chicks; the chicks were younger than the one above described, and were of a generally darker color. The yellowish tinge of their down was also rather stronger in tone. The red ants had found them out and were troubling them, but they were probably too large and strong to be killed by them. I saw no dead ones. The chicks utter a chirping sound, repeated three times in succession.

The pleasure derived from the many instructive days which I have passed in companionship of these Terns has led me to prepare this contribution to the life history of these beautiful and interesting birds.

A SWALLOW ROOST AT WATERVILLE, MAINE.

BY ABBY F. C. BATES.

NOT FAR from where a small stream, called the Messalonskee, joins the Kennebec River, one may see at evening from the middle of July to about the third week in September, an interesting sight in the bird line.

The willow trees along the banks of this stream, particularly a close row some five or six hundred feet in length, form the roosting place of vast numbers of Swallows. During the forenoon and early afternoon very few Swallows are to be seen in the sky, — indeed they are conspicuous by their absence, — but a little before sunset the birds begin to arrive in the vicinity, flying, sailing, chasing each other around in the upper air, everywhere within eye's reach. From north and south, east and west, in they

come out of the distance till one thinks the barns, banks, martin-houses and swallow nests of whatever description all over Maine must have yielded up their inmates. Shortly after sunset they gather more nearly in the region directly above the trees, incomers from every point of the horizon still joining them and toward the last exhibiting great hurry and intentness, as if fearful of being "late to meeting."[1]

Then begin the movements that are the most interesting feature of this gathering. At intervals *clouds* of Swallows will evolve something like order out of their numbers and perform *en masse* some of the most fantastic curves, spirals, counter-marches, snake-like twists and turns, with the sky for a background, that ever a company of genus homo executed on a finely polished floor. For instance, one evening they separated into two parts, one going to the right, the other to the left, each division making a grand circle outward, then joining again for a forward movement. There were some stragglers, but the figure was distinct and was twice performed, with other evolutions interspersed. Then a long snake-like movement from the upper air down very slightly inclined from the vertical, with two twists in it, a loop around a tall tree farther down the stream, and back, brought them into the tree-tops for roosting. That was the cleanest and most astonishing figure I ever saw them perform. Occasionally they drop down into the trees like pieces of paper, but oftener the final alighting is a combined movement, sometimes in the shape of an inverted cone, —usually in a grand sweep after their most elaborate evolution. Frequently they swoop out from the trees company after company, several times before the last settling, their wings not only making a tremendous whirring, but a perceptible movement of the air. Their chattering keeps up from half to three quarters of an hour after they settle in the trees and their dark little bodies against

[1] Just here let me say that having asked six men of reputed good judgment to give their individual ideas of the number of Swallows when this congregating season is at its height, the average of guesses (for such only could they be) brings the number about thirty thousand, the highest guess being one hundred thousand, the lowest, five thousand. Attempts have been made to photograph them, but at the time when they are best massed and sufficiently near for a photograph, the light is so dim that nothing whatever appears on the film.

the sunset sky look as numerous as the leaves. Often they weigh down a branch and then a great chattering, scolding and re-adjustment ensues. Sometimes there is a movement through the tree-tops to one spot as if a conference were called, and a more surprising amount of chattering than before. Then in a few minutes back they come till the tree-tops are about equally full. The noise which they make is suggestive of the whirring of looms in a cotton mill, heard through the open windows, — or of some kinds of water-falls.

They leave the trees in the morning a little before sunrise. August 26 we watched them go out. At 4.15 there were sounds as if of awakening and gradually the noise increased. At 4.25 they began to arise in companies at intervals of two or three minutes. They did not remain long in the locality and by five o'clock not one was to be seen.

During a heavy wind and rain-storm late one afternoon, the Swallows came about our house and those of our neighbors' on both sides of us, alighting on windows, blinds, cornices, gutters — every conceivable perching place, as well as the trees about the houses. Two electric wires running from one of the houses to the stable, a distance of fifty feet, were literally packed full, great scolding and pecking going on at new comers trying to find a foot-hold. Reckoning at least five to a foot, there were five hundred birds on the wires and they were quite as plentiful on many of the trees and upon the houses. This, and one or two similar occasions, afforded us a good opportunity for verifying our conjectures as to the kinds of Swallows. The greater proportion is Barn Swallows, but there are large numbers of Martins with them and also Bank Swallows. I see no reason why there should not be White-bellied Swallows and Eave Swallows too, as they build about here, but we have not seen them with the others. Swifts frequently fly in and out among the companies as they are gathering and even during some of their evolutions, yet they seem to be on different business, and very important at that, and we have never seen them going into the trees, though several people claim that they roost there.

At the time of the wind and rain-storm mentioned, we had sufficient curiosity to get into water-proofs and rubbers and

visit the roost. Not a bird was to be seen or heard about the trees and the Swallows were still perching upon our house when we went to bed. A gentleman who has a martin-house told us his Martins came back that night, though it had been several weeks since they left. We concluded the probable explanation of the episode was that perching upon the willows in the strong wind was too serious an undertaking and that they had to disband for the night and lodge wherever a safer place offered.

My note-book says: "Sept. 9. — Field glasses revealed only Martins in the group at the willows. These went through the same evolutions as formerly." "Sept. 26. — Birds at willows practically gone. Only about forty left."

This congregating has been noticed for many years; indeed I cannot find in the minds of the oldest inhabitants of our little city of Waterville, a recollection of a summer without them.

We suppose that the time of their appearance, middle of July, is regulated by the nesting season and the strength of the young to accompany their parents; but just why they gather, if such roosts are common, and whether their evolutions are thought to be intelligent and performed with any real purpose, we should be glad to know.

I asked two little urchins one evening what the birds were doing up there. One said, "I guess they 're marchin' "; the other, "No, they ain't! I know what they 're doin' — they 're dancin'."

A NEW SPECIES OF *THRYOTHORUS* FROM THE PACIFIC COAST.

BY A. W. ANTHONY.

A SERIES of Wrens collected the past summer, by Dr. Edgar A. Mearns and myself, on the island of San Clemente, California, prove to be so different from Vigors's Wren of the mainland that I have ventured to describe it as a new species to be known as:—

Thryothorus leucophrys, sp. nov.

SP. CHAR. — Differing from *T. spilurus* in decided gray wash on the upper parts, in the less heavily barred under tail-coverts, and in having a somewhat longer bill.

Type, No. 5514; ♂, Coll. A. W. A., San Clemente Island, California. Above sepia brown with grayish wash, especially on the interscapulars; superciliary stripe conspicuous, reaching posterior border of nostril in a heavy white line, much more pronounced than in any *spilurus* I have seen; chin, throat, middle of breast and belly pure white; sides of breast and sides, of a shade of gray approximating Ridgway's No. 7; flanks with a slight wash of bister; lower tail-coverts grayish-white with inconspicuous black bars; lower surface of tail light slate-gray, tipped with smoky gray. Wing, 55 mm.; tail, 60 mm.; culmen, 16 mm.; tarsus, 20.5 mm.

Although the present species is obviously closely related to the mainland bird, *T. v. spilurus*, I see no reason at present for regarding it as a subspecies of that form. San Clemente Island lies seventy-five miles from the mainland, and it is quite evident that the species does not intergrade through the other islands of the Santa Barbara group, as the *Thryothorus* from those islands proves to be no nearer related than does the mainland form.

The differences are at once noticeable even at a glance; the longer bill, the more purely white and much more conspicuous superciliary stripe, together with the more gray upper parts are quite striking to one acquainted with the mainland bird. The species is quite common in the thick cactus and low brush on the south end of the island, but owing to its habits is quite difficult to secure.

A NEW SUBSPECIES OF *HARPORHYNCHUS* FROM LOWER CALIFORNIA.

BY A. W. ANTHONY.

A SERIES of *Harporhynchus cinereus* taken from San Quintin to San Fernando differs so radically from the typical bird from Cape St. Lucas that I have separated the northern bird as a subspecies to be known, in honor of Dr. E. A. Mearns, as: —

Harporhynchus cinereus mearnsi. MEARN'S THRASHER.

Subsp. char. — Differing from *H. cinereus* in much darker upper parts, the rump vandyke brown in contrast, more rusty flanks and crissum, much larger and more intensely black spots on the lower parts and in the less curved bill.

Type, No. 4760, Coll. A. W. A., Jan. 2, 1894, San Quintin, Lower California. Above sepia brown, the rump and upper tail-coverts vandyke brown in contrast; below white, the throat, breast, sides and abdomen heavily spotted with large triangular spots of black; anal region, lower tail-coverts and sides with a strong rusty wash. Wing, 120 mm.; tail, 118 mm.; culmen, 28 mm.; tarsus, 36 mm.

The difference between the present race and typical *H. cinereus* is noticeable at a glance, even without comparison. The much darker upper parts, the rump brighter in contrast, together with the more heavily spotted under parts and rusty abdomen are very characteristic. The hair-brown upper parts of the St. Lucas bird gradually change to a shade approximating bister on the rump and upper tail-coverts. The lower parts are but slightly washed with bister on the flanks and with buffy on the lower tail-coverts, the abdomen being white.

This race is quite common about San Quintin, and in all suitable places as far south as I have collected. They were not common at the mines but between that point and the coast were several localities where they were always seen. They were always remarkably shy, making it almost impossible to secure specimens. On June 13 I was stalking a herd of antelope on the San Carlos mesa, near the coast, and had prostrated myself under a large cholla cactus to wait for the game, which was slowly feeding toward me; and in this uncomfortable position I spent about half an hour, during which not less than half a dozen of these usually shy Thrashers took up stations on adjoining cacti, within fifteen yards, showing great curiosity and making frequent remarks, uncomplimentary, no doubt, on the new species of lizard they had found, but always ready to drop out of sight at the first movement on my part.

THE LECONTE THRASHER, *HARPORHYNCHUS LECONTEI.*

BY DR. C. HART MERRIAM.

Plate I.

THE great Colorado River, emerging from the marvellous cañons of northern Arizona, bends southward to traverse a vast, inhospitable desert, parts of which, below the level of the sea, surpass the deserts of India, Arabia, and even the great Sahara in heat, aridity and desolation. The burning sun, set in a cloudless sky, beats down relentlessly on a dreary expanse of sand, gravel and clay, broken only by the seared walls of barren desert ranges. The picture is made more weird and the way fraught with greater danger by the mirage-breeding alkali beds that warn the experienced traveller of impending danger; but hundreds of venturesome explorers, pushing on until crazed with thirst, have been overtaken by despair and death.

These deserts receive little water: the rainfall is meagre, the streams from the surrounding mountains soon disappear in the hot sands, and the broad Colorado itself hurries on to the sea as if in a conduit, without imparting verdure to even its immediate banks save in a few favored spots. The vegetation is scanty and peculiar: the sandy gravel slopes are covered with the resinous *Larrea* or creosote bush, more or less mixed with cactuses, yuccas, daleas, ephedras and other desert forms, while the alkaline and saline clay soils are dotted here and there with greasewoods and fleshy saline plants.

Such is the home of the LeConte Thrasher. The environment is uncongenial to most diurnal forms of animal life, and the usually dominant element of competition is nearly absent in the struggle for existence — the struggle being one against hostile conditions, not against a multitude of competitors. Diurnal mammals are rare and restricted to a few species; birds are scarce, both as species and individuals, but reptiles are more plentiful, particularly lizards and rattlesnakes.

The area covered by these deserts is so large that different parts have received different names, as the Colorado, Mohave,

Panamint, Death Valley, and Amargosa Deserts in California; the Detrital, Gila, and Yuma Deserts in Arizona; the Pahrump and Vegas Deserts in Nevada, and the Valley of the Virgin which reaches northward across southeastern Nevada and northwestern Arizona to the extreme southwestern corner of Utah.

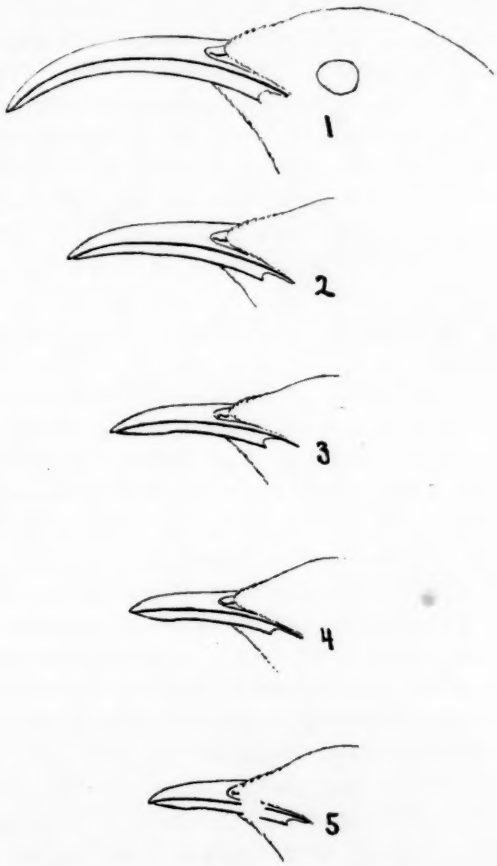
Of the birds that breed in the desert no species is abundant, though the Black-throated Sparrow (*Amphispiza bilineata*) is tolerably common and the Cactus Wren and Costa Hummingbird are frequently observed. A few others are met from time to time. The presence of two of these is most often revealed by their footprints on the sand. They are the Road-runner (*Geococcyx californianus*) and the LeConte Thrasher (*Harporhynchus lecontei*). The latter is by far the more abundant of the two and its pleasant song is often heard in the distance, though the bird is seldom seen.

During the Death Valley Expedition it was my good fortune to ride on horseback with my assistant, Mr. Vernon Bailey, a distance of about 1500 miles within the restricted area inhabited by the LeConte Thrasher, and to follow the northern boundary of its range from California across Nevada to Utah and Arizona. During this journey, covering the months of April, May and June, I first saw the bird on the Mohave Desert between Daggett and Pilot Knob, April 4; nearly every day afterward it or its footprints were seen, or its song heard. It was usually a shy bird, keeping at a distance, and eluding pursuit by running rapidly over the ground and hiding among the cactuses or desert brush. When running it commonly carried its tail elevated at an angle of about 45°, as mentioned by Mr. Stephens. If a Thrasher was seen singing on a mesquite or creosote bush and an attempt was made to approach within gunshot, it would immediately drop to the ground and escape by running; and the chances were very much against seeing it again. This extreme wariness is hard to understand in view of the remoteness of the region from the haunts of man, for it is safe to say that throughout the area traversed no bird of this species was ever looked at over the barrel of a gun before the visit of the Death Valley Expedition. At the same time it is true that at certain points along the outskirts of its range (as in Owens Valley, California) the young are

sought as cage birds by both Indians and whites. Probably two broods are reared in a season — judging from the widely different dates at which evidences of breeding were found. On April 29, I shot a two-thirds grown young in Pahrump Valley, Nevada, after a long and tiresome chase — partly on horseback and partly on foot. It was among the creosote bushes (*Larrea*) at the lower edge of the yuccas on the east side of the valley. The parent and two young were seen. On May 1, I killed a full grown young in Vegas Valley, Nevada. A week later (May 7), Mr. Bailey found a fresh nest in an arborescent cactus (*Opuntia echinocarpa*) at the foot of the high mesa on the east side of Muddy Creek, near St. Joe, Nevada. The parent bird was seen to leave the nest, but the eggs had not yet been laid. I hid behind a creosote bush and waited until the bird returned, which she did by running silently over the ground and climbing up to the nest so cautiously that, though watching the nest all the time, I did not see her until she settled upon it. The next day, May 8, Mr. F. Stephens, another member of the expedition, found a nest containing 3 nearly fresh eggs between Owens Lake and Little Lake, Inyo Co., California. The nest was in a branching cactus about 2½ feet from the ground. He saw a brood of nearly grown young the same day, and also observed both nests and young in Salt Wells Valley, on the northern edge of the Mohave Desert. On May 28, Mr. Bailey found a deserted nest in an arborescent cactus in Indian Spring Valley, Nevada. A month later (June 27), I discovered a nest containing two half-grown young in Antelope Valley at the west end of the Mohave Desert, California. Like the others, it was in a branching cactus less than a meter above the ground. One of the two young was a little larger than the other. The smaller of the two is figured in the accompanying colored plate.[1] It is thus evident that the breeding season covers at least three months — Mr. Stephens makes it even longer. Whether this indicates that more than one brood is reared, or that the date of nesting is subject to much irregularity, or both, the facts at hand are not sufficient to

[1] The adult shown on the same plate was killed by Dr. A. K. Fisher at Resting Spring on the edge of the Amargosa Desert, Feb. 7, 1891.

determine. But as a rule resident birds are less regular than migrants in the time of breeding, and in warm climates where the season is long the irregularity is likely to be greater than in cool climates where the season is short.



CHANGES IN THE FORM OF THE BILL WITH AGE IN *Harporhynchus lecontei.*

The nest is a compact and rather bulky structure composed mainly of small twigs and not covered above. Though sometimes in a mesquite or other thorny bush, it is placed by prefer-

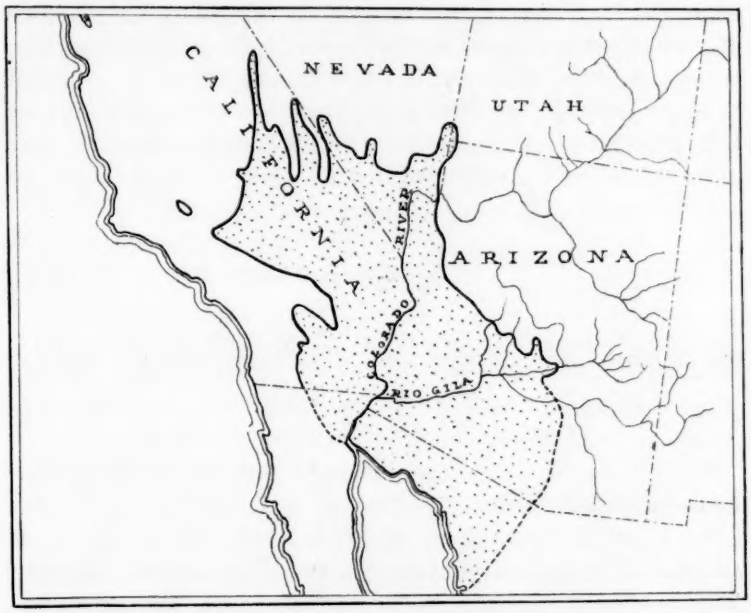
ence among the spiny branches of the common '*cholla*,' a small arborescent cactus (*Opuntia echinocarpa*), at a height rarely more than a meter above the ground. The covered woven nest of the Cactus Wren (*Heleodytes brunneicapillus*) is often found in the same cactus.

It is interesting from the evolutional standpoint that the strongly curved bill of the LeConte Thrasher is a peculiarity of the adult; the young in the nest show no trace of it. This is well illustrated in the accompanying bill outlines, all of which are natural size. Figs. 4 and 5 are from the two young taken from the nest in the Mohave Desert June 27. Fig. 3, showing the earliest trace of the curvature, is from the two-thirds grown young killed in Pahrump Valley, Nevada, April 29. Fig. 2, showing the next step in the development of the curve, is from the young killed in Vegas Valley, Nevada, May 1; and Fig. 1 is the bill of an adult killed by Dr. A. K. Fisher at Resting Spring, California, February 7.

As stated by Dr. Fisher, the LeConte Thrasher is probably resident wherever found, since it was obtained in winter at the northern limit of its breeding range and old nests were seen at or near most places where the birds themselves were noted. Furthermore, the absence of records from Mexico, except within its breeding range in northwestern Sonora, only a short distance south of our border, is additional evidence that it does not migrate.

Geographic Distribution. — In its faunal relations the LeConte Thrasher belongs to the arid Lower Sonoran Zone, as do most of its congeners; but it does not inhabit the whole of this zone, being restricted to the part that extends westward from central Arizona to the east base of the Great Divide in California. It overlaps the Divide at two points, Walker Pass, where I found it on the west slope about four miles below the summit; and the upper San Joaquin Valley, where Mr. Nelson found it on the south side of Buena Vista Lake and thence west and northwest for 15 or 18 miles toward the Temploa Mountains. The latter is an isolated colony. Mr. F. Stephens has traced it southward along the western edge of the Colorado desert, and has also found it near Cape Lobos, Sonora, about 125 miles south of the Arizona border — the only record for Mexico. On the east, Dr. E. A. Mearns has

obtained it at Desert Station, Casa Grande, and Picacho Butte in south-central Arizona, whence it is known to range northwestward along the base of the Plateau escarpment. Mr. Bailey and I found it on the west slope of the Beaverdam Mountains in extreme



AREA INHABITED BY LECONTE'S THRASHER (*Harporhynchus lecontei*).

southwestern Utah and northwestern Arizona, and followed it thence westerly across southern Nevada, where we saw it in the Valleys of the Virgin and Muddy, at the Bend of the Colorado, in Vegas, Pahrump, and Indian Spring Valleys, and throughout the Amargosa Desert. On the California side of the line it was found in Death Valley and its northwest arm (Mesquite Valley), and in Panamint and Owens Valleys. In the latter, both Mr. F. Stephens and Mr. E. W. Nelson recorded it as far north as Benton. The area it inhabits, except the small spot at the head of the San Joaquin Valley, is shown on the accompanying map. The San Joaquin area is omitted because the species is not positively known to breed there — though it probably does so.

Interesting articles on the habits of the LeConte Thrasher, by Dr. Mearns and Mr. Stephens, may be found in early volumes of 'The Auk' (Vol. I, 1884, pp. 253–258; *ibid.*, Vol. II, 1885, pp. 229–231; *ibid.*, Vol. III, 1886, pp. 299–307); and important technical matter, including the first description of the young, in a paper by Mr. William Brewster (*ibid.*, Vol. II, 1885, p. 197). A summary of the records made by the Death Valley Expedition was given by Dr. Fisher in 'North American Fauna,' No. 7 (May, 1893, pp. 128–130). Thirty-two specimens were brought back by this expedition — a considerably larger number than the total previously known in collections.

TWELFTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION.

THE TWELFTH CONGRESS of the American Ornithologists' Union was held in New York City, Nov. 12–15, 1894. The business meeting took place on the evening of November 12 in the 'Board Room' of the American Museum of Natural History. The three days' open session, to which the public was invited, was held in the Library of the Museum.

BUSINESS SESSION. — The meeting was called to order by the President, Dr. Elliott Coues. Fifteen Active Members were present. The Secretary's report gave the membership of the Union at the opening of the present Congress as 616, constituted as follows: Active, 48; Honorary, 22; Corresponding, 71; Associate, 475; — the total increase for the year being 34.

During the year the Union lost forty-five members, — eight by death, thirteen by resignation and twenty-four were dropped for non-payment of dues. The members lost by death were Dr. Eduard Baldamus,[1] who died Oct. 30, 1893, in Wofenbüttel,

[1] For an obituary notice, see the present number of 'The Auk,' under 'Notes and News.'

Germany, aged 81; Dr. Leopold von Schrenck,[1] who died in St. Petersburg, Jan. 20, 1894, aged 68; and Dr. Alexander Theodor von Middendorff,[2] who died at Hellenorm, Liveland, Russia, Jan. 28, 1894, aged 79, all Corresponding Members. Also the following Associates: Rev. Samuel Lockwood, Ph. D.,[3] who died at Freehold, N. J., Jan. 9, 1894, aged 75; Frank Bolles, LL. B.,[4] who died in Cambridge, Mass., Jan. 10, 1894, aged 37; William Cushman Avery, M. D.,[5] who died in Greenboro', Ala., March 11, 1894, aged 64; Pierre Louis Jouy,[6] who died at Tucson, Arizona, March 22, 1894, aged 38; Prof. J. W. P. Jenks,[7] who died in Providence, R. I., Sept. 27, 1894.

The Secretary also presented as a part of his report, the annexed table.

The report of the Treasurer showed the finances of the Union to be in good condition.

The officers elected were Dr. Elliott Coues, President; William Brewster and Dr. C. Hart Merriam, Vice-Presidents; John H. Sage, Secretary; William Dutcher, Treasurer. The vacancy in the Council occasioned by the election of Dr. Merriam as one of the Vice-Presidents was filled by the selection of Mr. Frank M. Chapman. One hundred and nine Associate Members were elected, but no additions were made to either the Active, Honorary, or Corresponding lists. The usual reports of Standing Committees were received.

The Amendments to the By-Laws proposed at the Eleventh Congress were considered; part were adopted and part rejected.[8] A change in Rule XI was proposed and after explanation adopted.[8]

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[1] For an obituary notice, see Auk, XI, 1894, p. 264.

[2] For an obituary notice, see *Ibid.*, p. 264.

[3] For an obituary notice, see *Ibid.*, pp. 189–190.

[4] For an obituary notice, see *Ibid.*, pp. 184–185.

[5] For an obituary notice, see *Ibid.*, p. 263.

[6] For an obituary notice, see *Ibid.*, pp. 262–263.

[7] For an obituary notice, see the present number of 'The Auk' under 'Notes and News.'

[8] See under the department of 'Notes and News' in the present number of 'The Auk.'

STATUS OF ACTIVE AND ASSOCIATE MEMBERSHIP BY LOCALITIES.

	Active.	Associate.	Total.
Arizona		3	3
Arkansas		1	1
California	3	28	31
Colorado	1	11	12
Connecticut	2	22	24
District of Columbia	13	23	36
Florida		5	5
Georgia		2	2
Idaho	1		1
Illinois	1	19	20
Indiana		4	4
Iowa	1	9	10
Kansas		7	7
Kentucky		1	1
Louisiana		1	1
Massachusetts	6	66	72
Maine	1	10	11
Maryland		6	6
Michigan	1	12	13
Minnesota	1	11	12
Missouri	1	7	8
Montana		1	1
New York	11	100	111
Nebraska		1	1
New Hampshire		1	1
New Jersey		14	14
North Carolina		2	2
Ohio	1	8	9
Oregon		6	6
Pennsylvania	1	46	47
Rhode Island		6	6
South Carolina		1	1
Tennessee		2	2
Texas		4	4
Utah		1	1
Vermont		1	1
Virginia		3	3
Washington		3	3
West Virginia		3	3
Wisconsin	1	4	5
Wyoming		3	3
Canada	2	15	17
Cuba		1	1
England		1	1
	48	475	523

PUBLIC SESSION. *First Day.* — The meeting was called to order by the President, Dr. Elliott Coues. An address of welcome was made by Mr. Morris K. Jesup, President of the Board of Trustees of the Museum. After appropriate response by the Chair, the meeting at once proceeded to the consideration of scientific papers.

Mr. Frank M. Chapman gave as the first paper of the morning 'Notes on the Habits of the Bell-bird, the Pigmy Hummingbird, and other Tropical Birds.'

The second paper was by Mrs. Abby F. C. Bates, entitled 'A Swallow Roost at Waterville, Me.' In the absence of the author it was read by Dr. J. A. Allen. Remarks followed by Messrs. William Dutcher, Frank M. Chapman, John N. Clark and Otto Widmann, much information being brought out regarding other Swallow roosts.

The third paper was by Mr. Otto Widmann on 'Baird's Sparrow.'

The fourth title was 'The Summer Range of Colorado Birds,' by Prof. W. W. Cooke. In the absence of the author it was read by Dr. Jonathan Dwight, Jr.

The fifth paper was 'Notes on the California Vulture (*Pseudogryphus californianus*),' by F. Stephens. This was read by the Secretary in the absence of the author.

The opening paper of the afternoon session was 'Remarks on the Avifauna of the Source of the Mississippi River,' by Dr. Elliott Coues. Next followed a paper on '*Helinaia swainsonii* in Missouri' by Otto Widmann. The third paper was by Mr. Wm. W. Price on 'The Nest and Eggs of the Olive Warbler (*Dendroica olivacea*).' In the absence of the author it was read by Mr. Frank M. Chapman.

'Robin's Winter Roost,' by Otto Widmann, was the fourth paper.

Mr. William Dutcher exhibited a Labrador Duck, believed to be the last specimen killed and possibly the best one extant.

Second Day. — The meeting was called to order by the President, Dr. Coues.

The first paper of the morning was by Mr. F. A. Lucas 'On the Tongues of Birds.' Remarks followed by Prof. W. B.

Barrows, Messrs. John N. Clark, George B. Sennett, Otto Widmann, the Chair, and the author.

The second paper, 'The Ornithology of Sable Island, Nova Scotia,' was by Dr. Jonathan Dwight, Jr. Remarks followed by Dr. Allen, Messrs. Sennett, Smith, Dutcher, and the author.

The third title was 'A Contribution to the Life History of *Porzana cinereiceps* Lawr., with Critical Notes on some of its Allies,' by Charles W. Richmond. In the absence of the author it was read in part by Dr. Allen.

The only paper of the afternoon session was by Mr. Frank M. Chapman entitled 'A Sketch of the Bird-life of the Lesser Antilles.' The members and visitors repaired to the Lecture Room of the Museum where lantern slides illustrating this paper were shown. Afterwards Mr. Wm. Dutcher exhibited lantern slides of common birds found in the vicinity of New York. Lantern slides of a few British birds, shown by Prof. A. S. Bickmore, concluded the afternoon.

Third Day. — The meeting was called to order by the President, Dr. Coues. Before proceeding to the reading of papers, resolutions were adopted extending the thanks of the Union to the Trustees of the American Museum of Natural History for a place of meeting and for other courtesies tendered to the Union; to the Council of the Scientific Alliance of New York for its cordial invitation to attend the meetings of the Societies forming the Alliance; and to the Linnæan Society of New York for generous hospitalities extended to the Union during its Twelfth Congress.

The first paper of the morning was by Mr. Otto Widmann on 'Smith's Longspur.' The second paper was by Geo. H. Mackay on 'The Terns of Muskeget Island.' In the absence of the author it was read by Mr. Wm. Dutcher. Remarks followed by Drs. Dwight and Allen, and Messrs. Sennett, Dutcher and Lucas.

The third title was 'Something New,' by Judge John N. Clark.

'The Nesting of Krider's Hawk in Minnesota,' by P. B. Peabody, was given in substance by Dr. Allen in the absence of the author. '*Certhia* in Missouri,' by Otto Widmann, was read by title.

The afternoon was devoted to a paper by Mr. D. G. Elliot on 'Domestic Pigeons and Fowls, their Origin and Races, with

reference to the Theory of Natural Selection.' It was illustrated with lantern slides. Remarks followed by the Chair and by Dr. Allen.

At the conclusion of this paper the Union adjourned to meet in Washington, D. C., November 11, 1895.

The attendance at this Congress, together with the large number of new members elected, not exceeded by any year, was particularly gratifying. It shows the continued interest in ornithology in this country.

JNO. H. SAGE,
Secretary.

Portland, Conn., Nov. 30, 1894.

RECENT LITERATURE.

Elliot's Monograph of the Pittidæ. — Part IV of this superb monograph bears date September, 1894. The eleven plates illustrate the following species: *Eucichla boschi*, *Pitta granatina* (on the plate "*Pitta granatina-malaccensis*" by typographical error), *P. granatina borneensis*, *P. mefoorana*, *P. cæruleitorques*, *P. atricapilla*, *P. cyanea* (two plates, giving old and young), *P. brachyura*, *P. baudi* and *P. erythrogastra*. So little appears to be known of these birds in life that generally (*P. cyanea* and *P. brachyura* form exceptions) the text is limited to descriptions of the plumage and the discussion of points of nomenclature in cases where names have been misapplied. An interesting case of this sort is furnished by the *Pitta atricapilla* of Quoy and Gaimard, who described the bird in 1830 and figured it in 1833. Later Lesson claimed that the name was preoccupied, having been previously given by Cuvier to another species. The name, however, so far as Mr. Elliot can determine, was never published by Cuvier and was doubtless merely a MS. museum name. Quoy and Gaimard's bird was later renamed *novæ-guinæ*, under which name it has since been universally known. In restoring the name *atricapilla* to this species Mr. Elliot acts strictly in accordance with the rule of priority, and makes a defense of the stand he takes which is well worth quoting, since this is but one of a class of cases constantly arising to vex the systematist. He says: "The law of priority is very clear in regard to the treatment of such cases, but some naturalists object to have it enforced on the ground of expediency, and because it would be

apt to create confusion. Doubtless such would be the temporary result in this and all similar instances when errors are corrected which have been continued by writers who have simply followed each other without making independent investigations; but the confusion is originally caused by those who commit errors, not by him who corrects them. . . . It may be inconvenient for those who have become familiar with any special group to have their ideas of its nomenclature disturbed, by showing that errors have been committed and then knowingly continued; but that would be a most indefensible reason to advance why these should not be corrected. . . . Conservatism is an excellent principle when it serves as a bulwark against the commission of abuses, but is a most baleful principle when it is exerted against the correction of errors." Part V, not yet published, will conclude the work. — J. A. A.

Two Popular Bird Books. — That there has recently sprung up a great popular interest in outdoor studies of nature is abundantly evidenced by the frequent appearance of non-technical works, particularly of works relating to birds. It is furthermore a subject of congratulation that such works show a steady improvement, not only in literary execution, but in the knowledge of the subject displayed on the part of the writers of such books. Also that the demand for them renders it feasible for publishers not only to bring them out, but to give to them an attractive setting as regards typography and illustration. Mr. Keyser's 'In Bird Land,' and Mr. Parkhurst's 'The Birds' Calendar' are recent ventures in the line of popular bird books.

Mr. Keyser's book[1] relates especially to the birds found about Springfield, Ohio. It consists of eighteen chapters, originally published in various periodicals during the last two or three years. It has a more distinctly literary flavor than Mr. Keyser's former collection of papers,[2] and abounds in poetic quotations, chiefly from the writings of Emerson and Lowell. The following transcript of the titles indicates the general style of treatment: 'Wayside Rambles'; 'Bird Curios'; 'Winter Frolics'; 'February Outings'; 'Arrival of the Birds'; 'Winged Voyagers'; 'Plumage of Young Birds'; 'Nest-Hunting'; 'Midsummer Melodies'; 'Where Birds Roost'; 'The Wood-Pewee'; 'A Pair of Night-Hawks'; 'A Birds' Gala-Day'; 'Various Phases of Bird Life'; 'A Bird Anthology from Lowell,' etc. The writer is an earnest and true bird lover, who wanders in all weathers and at all seasons in search of bird friends. He tells pleasantly what he sees, often with realistic detail, and shows himself to be not only

[1] In Bird Land | By | Leander S. Keyser | . . . . [= 9 lines of poetic quotations and monogram] | Chicago | A. C. McClurg and Company | 1894. 12mo., pp. 269.

[2] Bird-dom. 12mo., 1891. See Auk, IX, p. 63.

a competent observer, but quite capable of imparting to his readers the many bits of bird lore he gathers with so much zest from wood and field. The book properly closes with a good index.

Mr. Parkhurst's book[1] is much in the same vein, but rather more methodical in plan. Mr. Parkhurst's field is Central Park, New York City, and his book is "an informal diary of a year's observations" made chiefly "in that small section known as 'The Ramble' covering only about one-sixteenth of a square mile." The "observations," however, form really but a small part of the book, since they are made as it were the thread upon which he hangs an extensive array of general facts about bird life, such as would be most likely to interest the inexperienced but eager student of birds in their haunts. We find him rarely tripping in his general statements, while his observations on Central Park birds show him to be a careful field student, whose pleasantly told experiences must entice many of our city folk, who feel a longing for contact with living nature, to share his rambles. His book opens with a 'Prelude,' followed by chapters which bear simply the names of the months of the year, from January to December. It concludes with a 'Postlude' and an excellent index. The 'Postlude' gives a list of the 94 species met with, as a summary of his year's observations, which contain many facts of interest to ornithologists as well as to the lay reader. His style is attractive, and he has a way of 'putting things' that prevents his pages from becoming monotonous, as might easily prove the case with such a subject.

A feature of special interest to ornithologists is the illustrations, since they afford an indication of the possibilities of photography as a means of illustration in bird books. They are nicely executed 'process' plates, made from photographs of stuffed birds, with appropriate natural surroundings, the birds being from specimens in the 'Local Collection' of birds in the American Museum of Natural History; the pieces were designed and photographed by Mr. John Rowley, Jr., Chief of the Department of Taxidermy at the Museum. — J. A. A.

'The Birds About Us.'[2] — This is the latest of Dr. Abbott's charmingly written books on popular Natural History. In the present volume it has been the author's aim to treat briefly in systematic order of the more common birds of the United States — more especially of the Delaware Valley. The species are not treated under separate headings but we pass directly from one to another, ten to twenty being considered in each chapter. The characteristic habits of each bird are set forth in the

[1] The Birds' Calendar | By | H. E. Parkhurst | . . . . [= 2 lines from Wordsworth] Illustrated | New York | Charles Scribner's Sons | 1894. 12mo., pp. viii + 351, with 24 full-page process plates.

[2] The Birds About Us. By Charles Conrad Abbott, M. D. Philadelphia: J. B. Lippincott Company, 1895. 12mo., pp. 288.

author's well known style, interspersed with sketches of nature and extensive quotations from Wilson, Audubon, Nuttall, and many other writers, which together make a book that cannot fail to prove most attractive to the reader who possesses any appreciation for nature, while the facts recorded are in the main scientifically accurate.

Dr. Abbott very justly calls to account the careless sportsman, the "loafers" and plume hunters, who are responsible for the scarcity of many of our birds which were formerly abundant, and "silly women" who wear birds in their hats also come in for their share of censure. It is the "professional ornithologist," however, against whom Dr. Abbott is especially and unjustly severe. He says of their work: "To realize what bird life is we must do a great deal more than merely collect the creatures and measure the thousandth of an inch of their hind toes." "There has been too much collecting by far that has yielded nothing worth the knowing. It is not justifiable to kill one hundred warblers in a day just to see if a particular one is among them. There is nothing to be gained in determining that there are possible hybrids, or, it may be, an overlooked good species in a given area. Let what we do not know go unknown until discovered by accident and let the birds live." Strange advice surely from any one who pretends to believe in scientific investigation! And if Dr. Abbott thinks that professional ornithologists are accustomed to slaughter all the birds to be found in a given area in order to determine what species occur there, he certainly has not a very close acquaintance with those whom he criticises. Professional ornithologists have just as much respect for bird life as has Dr. Abbott and do not sacrifice any more birds than are necessary for scientific study.

Our author further states that "the plea for collecting is worn threadbare"; and concerning the habits and anatomy of birds, "all needed information can be had from scores of books." "What we now want to know about birds does not call for a shot-gun. Our museums are overstocked and the amateur collector is a nuisance." Ornithologists will scarcely agree with the above, as there are many questions regarding bird anatomy, structure, and coloration of feathers, which have yet to be solved and upon which the books give us little or no information. And as to amateur collecting, beginners in the study must collect specimens to aid them in their work and to enable them to properly identify the birds that they see. Had Dr. Abbott used a gun a little more and been certain of the identity of the birds of which he wrote he would have been spared the publication of many remarkable statements which appeared in some of his earlier works, and which he himself seems now to admit as errors, as they do not appear in 'Birds About Us.' He still, however, insists on the breeding of the Solitary Sandpiper at Trenton, N. J., and says that "it is foolish for theoretical ornithologists to dispute such statements." In view, however, of the position he now takes regarding some of his other remarkable statements, we may be pardoned for differing from this opinion.

'Birds About Us' is illustrated by 24 half-tone plates, partly reproductions from Audubon and Wilson and partly from mounted groups in the collection of the Philadelphia Academy of Sciences — for which by the way the author makes no acknowledgment whatever. There are also a number of woodcuts, generally copied from Wilson, and for the most part so rough as to spoil the appearance of an otherwise handsome piece of typographical work. — W. S.

Chapman's List of the Birds of the Vicinity of New York City.[1] — Masquerading as a museum guide, a local list of such excellence has been laid before the public that its most obvious shortcomings are the result of an endeavor to please, at the same time, two classes of readers, the museum visitor and the ornithologist. As a consequence it leaves much to be desired by both; one has a dictionary of information thrust upon him instead of a primer, and the other growls at the superfluous illustrations and the references to alcoves and cases. The pamphlet consists of three parts, a brief introduction, an annotated list, and a short bibliography. The reviewer is placed at a great disadvantage for he is obliged to assume a dual *rôle*. As a visitor he finds the guide confusingly replete with scientific information. In the introduction the birds are nicely fitted into groups of "permanent residents," "summer visitants," etc., but there is no hint that the same species may equally well belong to several of these groups; and when he looks further into the list he finds "migrants," "fall migrants," and "spring migrants," — groups to which apparently no reference has been made. Any one of ordinary intelligence will discover that these terms are synonymous with "regular transient visitants," but in a guide nothing should be taken for granted.

From an ornithologist's standpoint the list is most acceptable, and acquires a particular interest from the fact that it is the first complete list of the birds of the vicinity of New York City that has appeared since that of Mr. Geo. N. Lawrence in 1866. It therefore deserves careful scrutiny and comparison with this list rather than with others of more limited scope. Mr. Lawrence's 327 species have been increased to 348 by Mr. Chapman. Introduced and extinct species are not numbered as part of the list, but incongruously appear in the same type used for it. Besides, such species as *Camptolaimus labradorius* and *Tympanuchus americanus* ought to have been treated alike. Aside from mere synonyms, Mr. Chapman omits without comment the following birds given by Mr. Lawrence, viz.: "*Turdus* [= *Hesperocichla*] *nævius*," "*Puffinus*

[1] Visitor's Guide to the Local Collection of Birds in the American Museum of Natural History, New York City. With an Annotated List of the Birds known to occur within fifty miles of New York City. By Frank M. Chapman, Assistant Curator Department of Mammalogy and Ornithology. New York: Printed for the Museum. 1894. 8vo., pp. 1–100, with pll. iv and cuts in text.

Anglorum" [= *puffinus*], and "*Sterna Trudeaui*"; and excludes "*Procellaria pelagica*" and "*Sterna macroura* [= *paradisæa*] because no specimens are found in the Lawrence collection and there are no recent records. There are no less than three valid records for *H. nævius* near New York City, and neither of the reasons just given seems sufficient to exclude a species once recorded, nor do they explain other omissions. It is inconsistent to exclude, for instance, *Tringa alpina* or *Æstrelata hæsitata* by the 50-mile limit rule and then admit *Chen cærulescens* and *Anas crecca*.

As a whole, however, the list is refreshingly accurate. The English name given to *Acanthis linaria rostrata* on page 57 should be Greater Red-poll, but there are no other slips of the pen worthy of notice.

A new and pleasing feature is found in the habitats given for each species, and they are defined with unusual care. Still, in numerous instances they are carelessly expressed. "Breeds from Pennsylvania northward," for instance, is not a habitat. Many of the birds of the Canadian avifauna are correctly stated to breed southward along the Alleghany Mountains, but the following species have been omitted, viz.: *Sphyrapicus varius, Contopus borealis, Empidonax flaviventris, Spinus pinus, Seiurus noveboracensis, Sylvania canadensis* and *Certhia familiaris americana*. Some of them have been recorded as far south as North Carolina, years ago.

Turning for a moment to the introduction we find classified groups of birds that are not happily chosen. The distinctions are artificial, rarity usurping largely the place of a scientific basis. For instance, the "irregular transient visitants" might readily fall into other groups and the awkward term used thus become superfluous. More than this, why the Sooty Tern and the Oyster-catcher are grouped apart from the White Ibis and the Black-necked Stilt is not obvious on any basis.

However, there is so much of value in this important contribution, that we can well close our eyes to its comparatively unimportant defects.—J. D., Jr.

Ridgway on New Birds from the Galapagos Islands.[1]—In a preliminary paper of fourteen pages Mr. Ridgway has given us some of the results of his studies of the large collection of birds made at the Galapagos Islands by Dr. G. Baur and the late Mr. C. F. Adams in 1891. Says Mr. Ridgway: "Many of the specimens having been obtained on islands never before visited by a collector, it is to be expected that novelties would be found among the rich material which it has been my privilege to study. . . . Perhaps the most interesting result of Messrs. Baur and Adams' explora-

[1] Descriptions of Twenty-two New Species of Birds from the Galapagos Islands. By Robert Ridgway. Proc. U. S. Nat. Mus., XVII, 1894, pp. 357–370, No. 1007.

tions is the discovery of species which absolutely bridge the previously existing gap between the so-called genera *Geospiza* and *Cactornis*. . . . This matter will be fully discussed and illustrated in a much more detailed paper which will be published as soon as practicable." Of the twenty-two new species here described, three are referred to the genus *Nesomimus*, five to the genus *Certhidea*, seven to *Geospiza*, four to *Camarhynchus*, and three to *Pyrocephalus*. There are also remarks on "*Geospiza assimilis* (Gould?)" and *Pyrocephalus dubius* Gould, to which *P. minimus* Ridgw. is here referred.

Mr. Ridgway has also described[1] *Zosterops aldabrensis* from Aldabra Island, *Z. madagascariensis gloriosæ* from Gloriosa Island, *Cinnyris aldabrensis* from Aldabra Island, *C. abbotti* from Assumption Island, *Centropus insularis* from Aldabra and Assumption Islands, and *Caprimulgus aldabrensis* from Aldabra Island.—J. A. A.

Lucas on the Affinities of the Cœrebidæ.[2]—Mr. Lucas's paper is a collection of fragmentary though valuable notes, illustrated with figures of the palatal region, tongue, pterylosis, and intestines in quite a number of passerine birds, rather than a formal treatise. It opens with some suggestive observations concerning the difficulties that surround the investigator in attempting to elucidate the relationships of various puzzling genera among the Passeres. He says: "Representatives of the Mniotiltidæ, Meliphagidæ, Drepanidæ, Tanagridæ, and Fringillidæ, have been examined in the hope that the affinities of the Cœrebidæ might be made apparent; and I am compelled to confess that, on the whole, the result has been unsatisfactory, and that the examination of a considerable number of specimens has rather lessened my hopes that anatomical, and especially osteological, characters may be relied upon to show relationship among the passeres. Of course," he continues, "one trouble lies in the fact that the so-called families of passeres, at least very many of them, are not families at all, or not the equivalents of the families of other groups of vertebrates. It is my belief that any group of vertebrates to be of family rank should be capable of skeletal diagnosis, and this test applied to the passeres reduces them to a family or two, as has been done by Huxley and Fürbringer." While this may be true as regards the facts in the case, we cannot quite share Mr. Lucas's belief that among such a compact and numerously represented group as the higher Passeres it is essential to have an osteological basis for 'family' groups. A great deal depends upon the

[1] Descriptions of Some New Birds from Aldabra, Assumption, and Gloriosa Islands, collected by Dr. W. L. Abbott. By Robert Ridgway. *Ibid.*, pp. 371–373.

[2] Notes on the Anatomy and Affinities of the Cœrebidæ and other American Birds. By Frederick A. Lucas. Proc. U. S. Nat. Mus., XVII, 1894, pp. 299–312.

'laxness' or 'compactness' of structure of the group under consideration, since, as among mammals for example, differences that in one group (as in the Pinnipedia) are looked upon as merely specific, or at most subgeneric, would in other groups be considered of generic or of perhaps even higher importance. Hence among the Passeres we are hardly to look for, and much less to demand, as the basis for families such differences as we meet with among the lower orders of the class Aves.

Mr. Lucas's paper is an important contribution to the subject under discussion, which treats not only of the affinities of the Cœrebidæ, but also of such equivocal forms as the genera *Certhidea*, *Myadestes*, *Phœornis*, and *Phainopepla*.—J. A. A.

Rhoads's Reprint of Ord's North American Zoölogy.[1] — Mr. Rhoads has done good service through his reprint of George Ord's North American Zoölogy, of which for many years not a copy appears to have been anywhere accessible, either in this country or abroad. Formerly a mutilated copy existed in the library of the Academy of Natural Sciences of Philadelphia, but later it disappeared. The perfect copy from which Mr. Rhoads's reprint is made was discovered by him in the private library of Dr. J. S. Cohen of Philadelphia, who kindly placed it at Mr. Rhoads's service.

The importance of Ord's 'Zoölogy' results from the fact that in this work a number of new North American animals were for the first time here named, principally mammals. Of the eight new names which Ord (in this work) appears to have given to birds, only four [2] prove tenable, and these were long since duly incorporated into the nomenclature of North American ornithology. Ord's list of bird names was compiled, as Mr. Rhoads duly states, chiefly from Turton's edition of Linnæus's 'Systema Naturæ,' published in 1807, with the addition of the species described by Alexander Wilson. Although purporting to relate to "North America," many European and a larger number of South American species are included. The list proper (pp. 315–319) consists of

[1] A Reprint | of the | North American Zoology, | by | George Ord. | Being an exact reproduction of the part originally compiled | by Mr. Ord for Johnson and Warner, and first | published by them in their | Second American Edition | of | Guthrie's Geography, | in | 1815. | — | Taken from Mr. Ord's private, annotated Copy. | To which is added an Appendix on the more important | scientific and historic Qustions [sic] involved. | By | Samuel N. Rhoads. | — | Published by the Editor. | Haddonfield, New Jersey. | 1894.—8vo., pp. x (= introduction), 290–361 (= reprint), 1–90 (= appendix).

[2] *Phasianus columbianus* = *Pediocætes phasianellus columbianus* (Ord); *Sterna philadelphia* = *Larus philadelphia* (Ord); *Larus delawarensis* = *Larus delawarensis* Ord; *Anas columbianus* = *Olor columbianus* (Ord).

merely the common and technical names of the birds, but it is followed by "a succinct account of some of the most interesting birds of the United States, for which," says Mr. Ord, "we are chiefly indebted to Mr. Wilson's Work." This occupies pp. 320–357. Two of the new species (*Sterna philadelphia* and *Larus delawarensis*) are described in footnotes to the list; for descriptions of the others the reader is given a footnote reference to the "History of Lewis and Clark's Expedition."

Mr. Rhoads's annotations to the bird part of Ord's work occupy pp. 31–51 of his Appendix, and consist mainly of a statement of the equivalent current name of Ord's species, so far as they are certainly identifiable, with appropriate explanatory comment, particularly in the case of the North American species.

It is a great satisfaction to have a faithful transcript of this rare work placed within reach, although the interest that has centered about it is far greater than its importance, so far as its bird matter is concerned, would really warrant. It is somewhat different with the mammals, in which the chief importance of Ord's work, from a nomenclatural point of view, consists.

While we are very grateful to Mr. Rhoads for his reprint of Ord's 'Zoölogy,' we can hardly speak of the execution of his task as wholly above criticism. The ideal method of reproduction would have been of course by photography, so often resorted to in these days for the reproduction of letter-press. We trust that Mr. Rhoads has exercised the care in proof-reading the importance of the case required, but his own considerable array of typographical errors in the reprint, as well as in his own part of the work (see Errata, p. 51 of App.), leads us the more to regret that the text of Ord's work could not have been reproduced in facsimile; and especially when we note the large number of still uncorrected typographical errors (to say nothing of the idiosyncracies of punctuation) in his own text. In all probability, however, the errors, if any, in the reprint are not of material importance. — J. A. A.

Reichenow's Birds of German East Africa.[1]—This work forms part two of Volume III of the great work now publishing in seven volumes entitled 'Deutsch-Ost-afrikas,' being the bird part of the volume devoted to the vertebrates of East Africa. It is in the form of a handbook or manual, treating of 728 species, giving a brief diagnosis of each, with generally a short account of their habits and distribution. Analyti-

[1] Die Vögel Deutsch-Ost-afrikas. | — | Von | Dr. Ant. Reichenow. | . . . . [= 4 lines, titles, etc.] | — | Mit über 100 in den Text gedruckten, schwarzen und farbigen Abbildungen | nach der Natur gezeichnet von | Anna Held. | — | 1894. | Geographische Verlangshandlungung Dietrich Reimer, Berlin. | (Hoefer & Vohsen.) Roy. 8vo., pp. 250 + 3 ll., 108 illust. in text, part colored.

cal keys to the species and families facilitate identification. The work opens with a short historical introduction, giving an account of the ornithological exploration of the large area under consideration, with a bibliography of 81 titles of works relating to the ornithology of East Africa. This is followed by several pages devoted to the geographical and faunal relations of the region, and quite extended instructions as to methods of collecting and preparing specimens, and to the explanation of the terms used (illustrated with cuts) in the descriptions which follow. The illustrations are process-cuts, giving full length figures of generally one characteristic species for each family, with many additional figures of heads and other parts, many of them colored. The bibliographical references are mainly restricted to the original place of description of the species. Thus the work, while reduced to small compass, will serve as a very useful handbook to the birds of a still very imperfectly known region.—J. A. A.

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GENERAL NOTES.

'Gull Dick' again. — (See Auk, Vol. IX, p. 227, Vol. X, p. 76, and Vol. XI, p. 73.) Captain Edward Fogarty of the Brenton Reef Lightship, having kindly written me as usual regarding the movements of a certain American Herring Gull, called 'Dick,' I again take pleasure in communicating the same to the readers of 'The Auk.' On April 5, 1894, after partaking of a hearty breakfast, the bird flew around the lightship, and then took his departure, and was not again seen until about eleven o'clock on the morning of October 2, 1894, when he was observed flying around the lightship, thus making his *twenty-third season* here. It was noticed that his plumage presented a rather more ragged appearance than usual, his tail feathers being entirely wanting. The bird received his expected breakfast, and ate it with apparent relish. A companion Herring Gull was with him, but 'Dick' would not extend to him the invitation to partake also, and apparently did not desire his companionship. Some account of this bird having recently appeared in a Boston newspaper which contained statements which were unconsciously incorrect, I would say that 'Dick' has *never* permitted any one to fondle him, nor has he ever alighted *on* the lightship. — GEO. H. MACKAY, *Nantucket, Mass.*

Southern Capture of Larus leucopterus. — During the past winter some fishermen secured two Gulls, which I have preserved and which Mr. Frank M. Chapman identifies as follows: "No. 819, ♀, measures: wing, 15.25; tarsus, 2.16; exposed culmen, 1.64; depth of bill at angle, .56 in. I should pronounce it an example of *Larus leucopterus* in immature plumage."

"No. 847, ♂, measures: wing, 16.40; tarsus, 2.42; exposed culmen, 1.82; depth of bill at angle, .65. This specimen is slightly larger than average specimens of *L. leucopterus* and is thus intermediate between that species and *Larus glaucus*. It is, however, so much nearer the former than the latter that I should call this also *Larus leucopterus*." No. 819 was taken at Stamford, Conn., Feb. 16, 1894. No. 847 was shot at Rye, N. Y., March 3, 1894. — LOUIS H. PORTER, *Stamford, Conn.*

The Emperor Goose in British Columbia. — I wish to record the taking of the Emperor Goose (*Philacte canagica*) at Chemainis, Southern Vancouver Island, on the 20th of November, 1894. Is this not seven or eight hundred miles south of the prescribed limits of its southern range? The bird was shot with some Canada Geese and sold in the market here where I secured it.

I also wish to mention that I have just received a specimen of Harris's Sparrow (*Zonotrichia querula*), killed at Comox, B. C., by Mr. W. B. Anderson. This is the second example of this species found in British Columbia. — JOHN FANNIN, *Victoria, B. C.*

Branta canadensis. — Ponkapog Pond, Massachusetts, Dec. 5, 1893. A flock of Canada Geese (*Branta canadensis*), containing as near as could be estimated 2000 birds, passed to-day headed towards the south. They were separated into two lines or flocks, which were about one hundred and fifty feet apart. It was the largest body of these birds noted in this locality for forty years. On December 10, 1894, one hundred and twenty-three Canada Geese passed over towards the southwest; they were in broken flocks, and all talking in a vociferous manner. I am indebted to Mr. H. G. Nutter, of Boston, Mass., for the above.

The first flock of Canada Geese *Branta canadensis* this season were noted Oct. 17,— five birds.

From the 13th to the 20th of October, 1894, was the flight week for Black Ducks (*Anas obscura*), about 300 birds being noted passing south, the largest flock containing over fifty.

On October 15, 1894, thirty-two Cormorants (variety not known) in one flock were noted flying towards the south. — GEORGE H. MACKAY, *Nantucket, Mass.*

Cory's Least Bittern in Michigan. — A specimen of Cory's Least Bittern (*Ardetta neoxena*) was taken at Fairview Farm (Lat. 42° 13′ N.) Jackson County, Michigan on August 8, 1894. The skin is now in my collection. The bird, a fine male, was brought to me by a boy who had gone out with my dog and gun in quest of Waders for me. He was near shore in a boat, and my dog 'Heth' was slowly beating among the reeds and cat-tails when this bird was flushed, rising in the ordinarily sluggish flight of the common Least Bittern, and was taken on the wing. Not knowing the strange garb of black and chestnut, I sent the skin to Prof. Walter B. Barrows at Michigan Agricultural College. He positively identified it as *Ardetta neoxena*. This is, with little doubt, the first and only record of the species for Michigan. — L. WHITNEY WATKINS, *Manchester, Mich.*

The Red Phalarope at Bridgeport, Conn. — Mr. J. C. A. Meeker has given me the skin of a male *Crymophilus fulicarius* (Red Phalarope). The bird was found under some electric light wires on a bridge, May 20, 1894. Upon skinning it there was found a dark mark across the breast, showing the bird had killed itself by flying against the wires. As this is a very rare bird in this part of Connecticut, the record may be of interest.— J. B. CANFIELD, *Bridgeport, Conn.*

Numenius hudsonicus. — Nantucket, July 23, 1894. The first Hudsonian Curlew, or 'Jacks,' this season were seen to-day, — nine birds on Eel Point. They were again observed at the same place on July 29. There are fewer here this season than usual — in fact I have never known so small a number. — GEORGE H. MACKAY, *Nantucket, Mass.*

The 1894 Migration of Charadrius dominicus in Massachusetts. — The season of 1894 was unusually dry and warm, with entire absence of storms, moderate, pleasant weather prevailing throughout the entire migrating period, thus rendering it a matter of inclination, rather than necessity, that any American Golden Plovers (*Charadrius dominicus*) or Eskimo Curlews (*Numenius borealis*) should temporarily stop on the islands composing the group of which Nantucket is one. As a result but few Plovers did tarry, and no Eskimo Curlews. At Nantucket, August 18, 1894, the weather was clear with southwest winds; on the 19th nearly clear with a very light fog during a portion of the day, wind southwest. The first Golden Plovers were observed to-day passing over the eastern portion of the island, headed towards the south. Two flocks were seen, estimated to contain, respectively, fifty and thirty birds; none stopped.

There was an unusual large area of land burned over this season, more than I have ever known before, which should have proved particularly attractive to these birds as a resort. It was in consequence expected that many would stop which otherwise would have kept on. These hopes, however, were not realized. From the 19th to the 24th no birds were observed. During the night of the latter date, the wind having been westerly with some south in it at intervals, a few Plovers were heard passing over the town of Nantucket, but none stopped. Although out almost every day I have nothing to record until the 26th, when I saw four birds; wind southwest, calm, foggy outside the islands. As near as I can ascertain there are only about a dozen Plovers on the island and only four shot up to date.

August 29. Wind northeast to southeast, very light. A few Plovers passed over the town last night, and five were seen to-day. Also at sundown eight flocks were noted flying towards the west, the estimated numbers of which were seventy to twenty in a flock. None stopped on Nantucket. The weather was hazy; could not see off the shore.

September 3. The wind came from the northeast last evening about eight o'clock P. M.; at three o'clock in the morning it was blowing a strong breeze. I saw one flock of nine birds, and another of fifteen; about one hundred more were seen by other parties who were out. Only three birds were shot to-day, and seven on September 4.

Tuckernuck Island, September 5. About one hundred (estimated) Plovers landed last night; these are the first birds seen here this season. About twenty of them were shot up to September 10. Nantucket, September 6, I saw a flock of nine birds from which four were shot. September 7 was foggy early; three flocks of Plovers were seen towards the western part of the island; one contained nine birds, one seven, and one four, and a single bird. These, however, are not new birds; no new arrivals have been noted.

September 8, I drove all over the eastern burnt district. A gentle southeast breeze was blowing and the sky was overcast. Here I found several flocks of Plovers, one of twenty, from which I shot five, another of about forty from which I obtained ten.

September 9, drove over the same ground as yesterday and found a flock of six, from which I shot two; also saw a flock of about thirty; they were all the same birds seen yesterday.

September 11, I drove all over the eastern burnt district again, and saw the same old birds. I also saw some new arrivals, and there are now a hundred or more domiciled in this section, a good proportion of which are *young* birds, or 'Palebellies,' and which I think came on last night in a thick fog which prevailed in the late afternoon and early evening. The wind was strong northeast this morning. I shot eleven birds to-day, ten of which were *young* birds, the *first* noted or taken this season. September 12, I again drove over the eastern ground; all the Plovers on the island being centered there, I obtained eight birds to-day, all young. Four or five flocks of Plovers were noted passing by the northern side of Nantucket about six o'clock P. M., flying towards the southwest.

September 13, I drove again over the eastern ground and saw the same birds, and obtained one. At sundown I saw the largest flock I have observed for years, about two hundred (estimated) birds. They had just come on and were flying about seventy yards high, headed towards the west. The latter half of the flock were much inclined to stop, but every time they lowered their flight to do so, the leading half would rise up and allure them on. I drove out early on the following morning, over the western ground, without finding them. I also made inquiry regarding them. They did not stop, the wind was southwest and west. I do not think any new birds landed on these islands between September 13 and October 2. On the latter date fifteen of the domiciled birds were shot, and on the first I shot another, a young bird, which was very fat.

As far as I know, and I have made constant inquiry, but eighty-seven Golden Plovers have been taken on these islands during the entire season up to October 2. *No* Eskimo Curlew, *Numenius borealis*, have been seen or taken. During the season I have made inquires of three of the largest game stalls in Faneuil Hall Market, Boston; the answer was always the same, none of them had received any Golden Plovers, and but a *single* Eskimo Curlew had been brought in. I have no direct information from Martha's Vineyard or Cape Cod, Mass. — GEO. H. MACKAY, *Nantucket, Mass.*

Unseasonable Nesting of the Ground Dove in Florida. — In a letter dated Tarpon Springs, Florida, Oct. 29, 1894, my correspondent Mr. W. S. Dickinson writes: "I find that the Ground Dove breeds in October, [collecting] in flocks from March until then. Last year I got two sets [of eggs] on the 19th of October, one on the 22d, all with small embryos; one set this year on the 15th [of October]."

This unsolicited testimony is of interest, not only confirming the previous record of the late breeding of the Ground Dove made by Mr. A. T. Wayne (Orn. & Oöl. 1887, p. 102), but seeming to prove that this conduct is not exceptional in southern Florida. That it is the rule in

that region would seem to be implied by Mr. Dickinson's statements, a condition of affairs strangely reversing the usual order of avian economy.

It is indeed a fair question whether this be not a case of *very early* instead of *very late*. Either way the case is a paradox. — SAMUEL N. RHOADS, *Acad. Nat. Sci., Philadelphia, Pa.*

The Passenger Pigeon in Aitkin County, Minn., with a recent Record for Northeastern Illinois. — Some facts lately furnished me by a Minnesota correspondent may be of interest in connection with the more recent movements of *Ectopistes migratorius*. Referring to the presence of the Wild Pigeon in his neighborhood the past spring, Mr. Eli La Mere, of Hickory, Aitkin County, Minnesota, writes me under date May 12, 1894, as follows: "Father saw a flock which was quite large; he says there were at least 500 of them in the flock. The boys see a pair occasionally in our sugar-bush and they seem quite tame. I think they will nest here this summer."

A subsequent letter received from him dated July 22 confirms in a measure the fact of its having bred there this spring, a single one being seen as late as the 20th of June.

The correspondent referred to in this instance is the son of a farmer-hunter at whose house the writer stopped for a number of days while visiting the State in the spring of 1893, and that the account herein given is truthful I have no reason to doubt.

Moreover the Pigeon was reported to me as being there during the time of my visit, a single individual being noticed by a timber 'cruiser,' who was perfectly familiar with the bird.

During late years the Passenger Pigeon has become extremely rare in Northeastern Illinois, at least so far as the neighborhood of Chicago is concerned. My latest record was made at Glen Ellyn on Sunday, Sept. 4, 1892. It was a young-of-the-year, very tame and unsuspicious. It was discovered in the company of some Jays and feeding about the piles of dirt recently made in excavating for the foundation of a house, well within the limits of the town, and was also observed to be picking the grain from some fresh horse-droppings, in which occupation it was harassed somewhat by the Jays. But the day, location and circumstances under which my observations were made precluded the possibility of the capture of the specimen. — BENJ. T. GAULT, *Glen Ellyn, Ill.*

The Turkey Buzzard in Plainfield, New Jersey. — A specimen of *Cathartes aura* was caught here on June 30, 1894. It is the first time the bird has been seen here. During the night of June 29 there was a heavy shower, and the bird was found sitting on a fence by the roadside the next morning, so wet that it could not fly and so was captured. I cannot find any one who has ever seen a specimen in this county. — STEPHEN A. KRAM, *Plainfield, N. J.*

Notes on the California Vulture. — It may interest members of the American Ornithologists' Union to learn that the California Vulture (*Pseudogryphus californianus*) is not likely to become extinct yet, as I recently saw a large flock of these rare birds. The circumstances were as follows: Oct. 10, 1894, while driving from Havilah southward, just as I was coming down into Walkers Basin, in the extreme southern end of the Sierra Nevada, I saw a California Vulture flying high in the air. As it was the first I had seen since March I got out my field glass and watched it. It appeared to settle toward the ground. A few minutes later another appeared and I saw it alight. As the road passed near where it alighted I kept on to opposite that point and getting out the glass again saw quite a number of Vultures about a carcass. A number of Ravens had flown away, but I could see no Turkey Vultures among those remaining. The bare necks of several appeared plain yellow at that distance.

They were about half a mile away. The ground was level and bare. The only cover was a wire fence, so it was nearly a hopeless case to attempt to stalk them, but the wind was blowing hard from the south and it seemed possible to walk up from the leeward and circle near enough for a shot, and so I camped and tried it. Before I got half way they began to rise and the last one left by the time I got within 300 yards. As I expected, the strong wind made them swing nearer me, but probably none came nearer than 150 yards. I expended two charges of buckshot in the futile hope that a stray buckshot might strike one.

As they rose singly or two or three together I had a good opportunity to count them. They were twenty-six in number! It was a sight I never before witnessed and do not expect to see again. Just think of it! Twenty-six California Vultures circling around above me, all in sight at once, as if they were but so many Turkey Vultures, and we had supposed the species was nearly extinct. Possibly it was a grand meeting of all the survivors, a family reunion; at any rate I had seen none for months and have seen none since.

I noticed but one immature bird. It rose last and perhaps others were in the thickest of the flock. I singled out two of the largest to fire at. They were not much larger than the average and there was no giant in the flock. Probably nine feet and six inches would be the spread of wings of the largest.

On walking up to the carcass I found it to be that of a young horse, not much eaten yet. In the hope that some of the birds might return I determined to wait until night in the vicinity (it was then 11 A.M.). Seeing the hopelessness of attempting to stalk them I tried another way to get them, and getting out half a dozen steel traps, set them around the carcass. It was an unfair method but I think few ornithologists would have hesitated on that account. It was useless, as no Vulture came in sight, although I waited until the approach of night necessitated driving on to some place where I could find water and feed for my horses, which

might be distant, as I did not know the country, this being my first trip through it.

The extreme drouth of the past season is destroying great numbers of cattle and horses in many parts of California and food for Vultures is therefore abundant. Bitter experience has increased the natural wariness of the species and now it is by a fortunate accident if the collector obtains a specimen. Unless an epidemic or some other disaster overtakes the species its extermination will not occur in our day. — F. STEPHENS, *Witch Creek, San Diego Co., Cal.*

Clark's Nutcracker in Eastern Missouri. — On the 15th of November last (1894) I had occasion to drop into the establishment of a prominent taxidermist, who handed me a bird to identify which proved a fine adult specimen of *Picicorvus columbianus*, Clark's Nutcracker, an extreme western species, never known to have been seen in this locality before. The specimen in question had been killed about four miles east of this city (Kansas City, Mo.) by a party while hunting in what is known as Big Blue bottom, formerly a heavily timbered district, though considerably thinned out now. The taxidermist was not positive as to the date of capture, but thought it was Oct. 28, or thereabout. He asked the gentleman who brought the specimen to him if any others like it were observed and he stated none others had been seen. Unfortunately he did not take the gentleman's name and address, so I had no opportunity of interviewing him personally. Prof. Dixon, the taxidermist, says he will mount this specimen, and probably send it to the State University at Columbia, Mo.

There was also brought into this same establishment a splendid specimen of the Acadian Owl (*Nyctala acadica*), killed by flying against a plate glass window on Broadway Avenue, this city, and picked up by a passer-by and brought in to be mounted. This is the second specimen of this diminutive species of the Owl family which had come into his hands from this immediate locality. — JOHN A. BRYANT, *1221 Olive St., Kansas City, Mo.*

Chats reared by Song Sparrows. — On June 8, 1894, while collecting about three miles north of Poughkeepsie, Dutchess Co., N. Y., I found a nest of the Chat (*Icteria virens*) containing a set of four eggs. They were packed away with some others I had collected and taken home, but on attempting to blow one I found that they were heavily incubated, the embyro being so large that it would have been impossible to remove it. In a small hedge near the house at which I was staying was a nest of the Song Sparrow (*Melospiza fasciata*) containing a set of four very pretty eggs, but I did not like to rob the bird, as it was quite tame, and I had watched the building of the nest with a good deal of interest; so I thought of a scheme by which I could obtain the set and still give Melos-

piza a brood to rear. I removed the eggs (which were perfectly fresh) and substituted those of Icteria, which had been without warmth for several hours; but, contrary to my expectations, they all hatched by the 13th, and the young birds were tenderly cared for by their foster mother until they left the nest about three weeks later. The young Chats grew so rapidly that they completely filled the nest in a short time, and it was a curious sight to see the mother feeding or endeavoring to cover with her wings her three charges, who were fully as large as she.

This experiment proves that *Melospiza fasciata* will rear a brood of totally different and much larger birds, whose eggs hatched a long time before her own would have. And also that *Icteria virens* will live on the same food as Melospiza, for we can hardly suppose Melospiza to have been intelligent enough to collect the same food for the young birds as their own mother would have done. To me it is an interesting subject and I intend to try other similar experiments next spring. — CURTIS C. YOUNG, *Brooklyn, N. Y.*

A Swallow Roost near Portland, Conn. — On the opposite side of the Connecticut River from Portland are what are locally known as the 'Little River' meadows. These meadows contain several hundred acres and through them flows Sebethe (Little) River which empties into the Connecticut. Along the banks of this 'little river' and its tributaries, water oats (*Zizania aquatica*) grow in abundance, giving food and shelter to the Rail, Marsh Wrens, and many other birds. These oats are the roosting place of thousands of Swallows, the birds spending the night clinging to the upright reeds, one above another. As a boy it was often my practice to fire a gun after dark in order to start the Swallows up and then witness their tribulation when trying again to find a suitable place for the night. This habit of disturbing the poor birds has not deserted me in later years.

The Swallows commence to congregate in these marshes early in August, and a small number may be found there the last week in October; the bulk, however, are seen from the middle of August until late in September. During the day they leave the meadows and only a few are seen in the vicinity, but at half past four in the afternoon they begin to appear from all directions, the flight ceasing about 6 P. M. My house is situated on high ground some two miles east of the marsh, and the flight of these birds over my premises, and toward this meadow, is so regular (from 4.30 to 6 o'clock) each afternoon, that a watch is hardly necessary to tell the time of day. Tree Swallows (*Tachycineta bicolor*) predominate at this roost, but many Barn Swallows (*Chelidon erythrogaster*) are seen, and a few Cliff and Bank Swallows (*Petrochelidon lunifrons* and *Clivicola riparia*). Occasionally a Martin (*Progne subis*) joins the multitude of other Swallows flying about the marsh. — JNO. H. SAGE, *Portland, Conn.*

Vireo philadelphicus in Cambridge, Mass.— On the 27th of September, 1894, a boy brought in a Philadelphia Vireo which he had just killed in the museum grounds. Looking through 'The Auk,' and the Bulletin of the Nuttall Ornithological Club, I find only three records for this bird in Massachusetts, viz.: Cambridge, Sept. 7, 1875 (B. N. O. C., I, 19), Magnolia, Sept. 18, 1879 (*id.*, V, 53), and Brookline, Sept. (*id.*, VI, 56). It seems likely that the vernal passage of this Vireo to its breeding places in northern New England is made to the westward of Massachusetts — perhaps up the Hudson River valley, where both the male and female have been taken in May, at Troy, N. Y. (B. N. O. C., V, 239). — WALTER FAXON, *Museum of Comparative Zoölogy, Cambridge, Mass.*

The Prothonotary Warbler in Massachusetts. — Mr. J. W. Thompson picked up on the morning of Sept. 15, 1894, on the depot platform at Mattapan Station, N. Y., N. H., & H. R. R., a dead Prothonotary Warbler (*Protonotaria citrea*). The damaged bill and breast showed plainly that it met its death by striking against one of the mass of telegraph wires that were hanging directly over the spot where it was found.— M. ABBOTT FRAZAR, *Boston, Mass.*

The Winter Wren a Night Singer. — In the long list of birds that sing in the night I do not remember to have seen the name of the Winter Wren. That it sometimes sings on clear wintry days during its temporary sojourn in the vicinity of Philadelphia is probably well known to certain favored people. A bird of this species has for several years made the fastnesses of a thick hemlock hedge in my yard at Haddonfield, N. J., his winter home, and he sometimes favors me with a song in the early morning, even when the ground is covered with snow. Not content with this, he surprised me the other night, about ten o'clock, by one of his sweetest efforts. The song on this occasion was not so loud as that of more wakeful moments, but well-sustained for more than half the usual duration of the nuptial song, and then falling into a scarcely audible trill, as if the little dreamer had waked in the midst of his vision and, like more human sleepers, was reluctant to believe its unreality. — SAMUEL N. RHOADS, *Haddonfield, N. J.*

A Belated Mockingbird in Eastern Massachusetts. — On Nov. 25, 1894, I secured a male Mockingbird in good condition in a buckthorn hedge near my house. The weather was rough, with squalls of snow, but not cold. Previously, however, the thermometer had registered as low as 14°, with snow enough to make good sleighing.

The 'escaped cage bird' theory, which naturally occurs at once, does not apply here (unless braced up with a supplementary theory that the escape was remote enough to allow the bird to make himself over), the plumage and feet being in perfect condition.

There are quite a number of records for eastern Massachusetts, the latest appearing to be as follows: One reported by Torrey, Marshfield, Aug. 15, 1889 (O. & O., Sept., 1889); one by Miller, Provincetown, Sept. 11, 1890 (Auk, Jan., 1891); one by Mackay, Nantucket, Nov. 20, 1890 (Auk, Jan., 1891); one by Cory (young of the year), Hyannis, Aug. 30, 1891 (Auk, Oct., 1891). The first named is of special interest, being in the spotted plumage and accompanied by three or four others, a fair inference being that a brood had been hatched in the vicinity.

The breeding of the species farther west, near Springfield, has been a matter of several records, the latest, I think, being that of R. O. Morris (Auk, Jan., 1892), who says "a pair passed this, the fourth successive season, in West Springfield."

In view of the above, can we not abandon the cage bird idea for this section? — F. C. BROWNE, *Framingham, Mass.*

The Willow Thrush (*Turdus fuscescens salicicolus*) **a Migrant in Northeastern Illinois.**— I am indebted to Mr. Ridgway for the identification of two "very typical" specimens of this Thrush that were collected by the writer the past spring (1894), at Glen Ellyn, Ill., a male being secured on the 6th and a female on the 21st of May.

Since Mr. Coale's original record,[1] only one other specimen, taken by him at Ravenia, Ill., May 17, 1890, referred to in July, 1894, number of 'The Auk,' and now in the Field Columbian Museum of Chicago, has been taken to my knowledge in this State. It is of interest, therefore, to note that on the day of the last capture, May 21, at least two others were seen.

This fall I have found it to be a regular migrant here, specimens being taken Aug. 29 (the date of my 'first,' although a doubtful record, was made three days earlier), and again on Sept. 4, when one was also noticed. Others were here Sept. 1 (1) and Sept. 6 (2); the last one, a single bird, was recorded on the 8th of the month.

In view of the foregoing, supplemented with the general information furnished me by Dr. Merriam, some time ago, that the Agricultural Department at Washington has on file additional Mississippi Valley records of *salicicolus*, it would be well for the observers of Illinois in particular to keep a better lookout for this bird, as it will doubtless prove to be more plentiful with us than has been previously supposed.—BENJ. T. GAULT, *Glen Ellyn, Ill.*

Two Records from Keokuk, Iowa. — On the 16th of December, 1892, I shot a specimen of *Junco hyemalis shufeldti* on the Illinois shore just opposite this city. It was with several other Juncos, all, as far as I could tell, of the common variety.

[1] Bull. Nutt. Orn. Club, 1883, p. 239.

On the 10th of November, 1894, a boy brought me a *Somateria spectabilis* that he had shot on the Mississippi. It was a male in brown plumage, but showing a few white and black feathers. The stomach contained nothing but fine quartz gravel. — WM. E. PRAEGER, *Keokuk, Iowa.*

Connecticut Notes.— Through the kindness of Mr. H. Hoyt I am enabled to report the capture here of a male specimen of the Sooty Tern (*Sterna fuliginosa*). The bird was knocked over with an oar, in September, 1879, and brought in to Mr. Hoyt. He preserved the skin and it is now in my collection.

During the summer and fall of 1894 the Yellow-bellied Flycatcher (*Empidonax flaviventris*) was quite common. I secured ten specimens, all males, during August and September.

Lincoln's Finch (*Melospiza lincolni*) has been observed in Stamford during the past year, and three specimens have been taken — one in the fall and two in the spring.

On Jan. 19, 1894, a farmer brought in a fine female Duck Hawk (*Falco peregrinus anatum*). The bird was shot while eating a pigeon taken from the barnyard.

During the spring of 1894 the writer took two sets of the eggs of the Rough-winged Swallow (*Stelgidopteryx serripennis*); one of six eggs on May 26, and one of five on June 9. — LEWIS H. PORTER, *Stamford, Conn.*

Bird Notes from Springfield, Massachusetts. — Last year, upon a narrow platform, under the cornice of a building six stories high in the center of the business portion of Springfield, a pair of Sparrow Hawks (*Falco sparverius*) built their nest and the female deposited therein a set of five eggs, which were successfully hatched. The young were then taken and removed to the roof of the building and placed in a box, and were followed there and cared for by the parents until they were fully grown. Any one going on to this roof and near the nest would be assailed by one of the old birds who would dart at the intruder from the spire of a neighboring church, where one of the parents was usually stationed. These facts seem remarkable when it is considered that the incubation and rearing were in the very heart of a busy city of fifty thousand people. Two of the young are still kept here in confinement.

Mr. E. H. Barney is devoting several acres of land near his home in the suburbs of Springfield to the cultivation of numerous kinds of trees and shrubs that long retain their seeds, hoping thereby to attract various kinds of birds, that he and others may study their habits. To this place, early in the autumn, a flock of about fifty Red-headed Woodpeckers (*Melanerpes erythrocephalus*) came and remained several days. Heretofore these birds have not been observed here, except occasionally singly or, more rarely, in pairs.

One of the greatest enemies to bird life in New England is to be found in the Italians, who during the last ten years have so numerously settled in the cities and larger towns. Throughout the whole year they roam over the country armed with cheap guns, shooting birds of all sizes, from the Kinglet up. Two police officers recently arrested two of these men who were in the outlying part of Springfield engaged in this illegal work. In their possession were found nearly fifty birds, the taking of which was unlawful. Among the kinds they had, I noted the Catbird, Robin, Rusty Grackle, White-throated and Song Sparrows, Olive-backed Thrush, Rose-breasted Grosbeak, Flicker and Downy Woodpecker.

September 1, a Least Bittern (*Botaurus exilis*) was taken here, and October 16, a Yellow Rail (*Porzana noveboracensis*). I have never known of the presence of the latter bird here before, and there is but one record of the capture of the former in this part of the Connecticut River valley. — ROBERT O. MORRIS, *Springfield, Mass.*

North American Bird Notes from Costa Rica. — **Tringa bairdi.** — Two specimens of Baird's Sandpiper were taken and a number of others seen June 8 on the Volcano of Irazú, above Tierra Blanca, at about 1500 meters altitude. The birds seemed to be at home and I have wondered whether it is possible they breed there. The genital organs indicated approaching activity.

Tachycineta thalassina. — While collecting at the mouth of the Matina River (Atlantic coast) in the latter part of March I found the Violet-green Swallow not uncommon in company with *T. albilinea*. Perfect friendship seemed to exist between the two species. *T. albilinea* was breeding commonly but in none of the specimens of *thalassina* secured did the ovaries indicate approaching activity. *T. thalassina* has also been taken on the Pacific side of Costa Rica at Bebedero. There is a single specimen from that locality in the collection of the Museo Nacional de Costa Rica.

I believe this brings the record several hundred miles southward for *T. thalassina*. — GEO. K. CHERRIE, *Field Columbian Museum, Chicago, Ill.*

Notes on the Summer Birds of Central Berkshire County, Mass. — The publication, in 1884, of Mr. W. Brewster's 'Notes on the Summer Birds of Berkshire County, Mass.' (Auk, Vol. I, pp. 5–16), established the Canadian character of the avifauna of northern Berkshire. The lists published by Mr. W. Faxon (Auk, Vol. VI, pp. 39, 99), present a very full account of the distribution of the birds on Graylock, and give in addition an account of the birds of the southern end of the county. Attention has not yet been called, I believe, to the very general distribution of certain northern birds throughout the central part of Berkshire County, particularly in the eastern half, so that the following notes, made in the summers of 1892 and 1893, may be of interest.

The character of the eastern half of the county differs in a marked degree from that of the western. The Taconic range, which forms the western boundary of the county, consists of a series of isolated peaks, separated by the Hoosick and the Housatonic Valleys from the high ground to the eastward. Here the surface is an almost unbroken plateau, falling gradually from an altitude of over 2000 feet, north of the Westfield River, to 1500 feet at the Connecticut boundary. Black spruce and balsam fir, which are absent in the Housantonic Valley and on the Taconic range, are characteristic trees of this plateau, and extend as far south as the town of Otis, about fifteen miles north of Connecticut.

The birds in the following list are either not reported in the published lists of Berkshire birds, or else were found in stations much further south than those hitherto noted. Unless otherwise specified the following observations were made between June 27 and July 16. Mr. W. Faxon has permitted me to use in the preparation of my list several of his manuscript notes.

1. **Anas obscura**. BLACK DUCK. — One pair seen in Stockbridge.

2. **Aix sponsa**. WOOD DUCK. — A female with young in Stockbridge.

3. **Ardea virescens**. GREEN HERON. — Not common.

4. **Rallus virginianus**. VIRGINIA RAIL. — One in Stockbridge.

5. **Porzana carolina**. CAROLINA RAIL. — One in Stockbridge, May 30, 1892.

6. **Fulica americana**. AMERICAN COOT. — A pair was seen by Mr. W. Faxon in Cheshire Reservoir, June 21, 1892.

7. **Totanus solitarius**. SOLITARY SANDPIPER. — Two seen in Becket, July 8, 1893.

8. **Colinus virginianus**. BOB-WHITE. — Not uncommon in Stockbridge in 1892; none found in 1893.

9. **Bonasa umbellus togata**. CANADIAN RUFFED GROUSE. — Found by Mr. Faxon on Graylock.

10. **Accipiter velox**. SHARP-SHINNED HAWK. — Two seen in June in North Adams by Mr. Faxon.

11. **Asio wilsonianus**. AMERICAN LONG-EARED OWL. — A specimen in the Pittsfield Athenæum, labelled "Pontoosuc Lake, April 30, 1879."

12. **Asio accipitrinus**. SHORT-EARED OWL. — A specimen in the Pittsfield Athenæum, labelled "Pittsfield, April 17, 1879."

13. **Megascops asio**. SCREECH OWL. — Young found in Stockbridge.

14. **Bubo virginianus**. GREAT HORNED OWL. — Nest with young found in Stockbridge, April 8, 1893.

15. **Coccyzus americanus**. YELLOW-BILLED CUCKOO. — One in Stockbridge.

16. **Melanerpes erythrocephalus**. RED-HEADED WOODPECKER. — One seen in Stockbridge, May 30, 1892.

17. **Contopus borealis**. OLIVE-SIDED FLYCATCHER. — A nest with young found in Hinsdale, June 30, 1893.

18. **Zonotrichia albicollis**. WHITE-THROATED SPARROW. — Not rare from Becket northward.

19. **Junco hyemalis.** SNOWBIRD. — Not rare on the Hoosac Plateau.

20. **Vireo flavifrons.** YELLOW-THROATED VIREO. — Three or four in Stockbridge.

21. **Dendroica coronata.** MYRTLE WARBLER. — One in Becket, two in Stockbridge, in white pine woods.

22. **Dendroica maculosa.** MAGNOLIA WARBLER. — Not rare among spruces from Becket northward.

23. **Dendroica blackburniæ.** BLACKBURNIAN WARBLER. — A few in Stockbridge; not rare in spruce woods from Becket northward.

24. **Dendroica virgorsii.** PINE WARBLER. — Mr. Faxon shot a female in North Adams in the breeding season.

25. **Troglodytes hiemalis.** WINTER WREN. — One heard in Great Barrington, fourteen miles north of the Connecticut line; heard also in Becket and Washington.

26. **Cistothorus stellaris.** SHORT-BILLED MARSH WREN. — Locally common in Stockbridge.

27. **Regulus satrapa.** GOLDEN-CROWNED KINGLET. — Found in spruce woods in Becket, Washington, and northward. — FRANCIS H. ALLEN, *West Roxbury, Mass.*

Some Notes on Cape Breton Summer Birds. — Through the kindness of Mrs. Bolles I have before me a list of the birds observed in Cape Breton by the late Frank Bolles during the first two weeks of August, 1893. This enables me to make at least two additions to the list of summer birds of the Bras d'Or region as published in 'The Auk' (Vol. IV, p. 13, and Vol. VIII, p. 164) by Dr. Dwight and myself. These two species are *Loxia curvirostra minor*, which Mr. Bolles "met with in small numbers all through the region between Baddeck and Ingonish," and *Dendroica cærulescens*, one individual of which he found near Baddeck.

As to the ten following species Mr. Bolles left no record of the precise locality where he observed them, and they may or may not have been in the Bras d'Or region: —

Larus argentatus smithsonianus. (In June 1890 I found numbers of these on the southwestern coast of the Island.)

Anas obscura.

Clangula hyemalis. (Doubtless migrants.)

Totanus solitarius.

Antrostomus vociferus. Mr. Bolles did not meet with this bird himself, but when he whistled the song, "the dwellers by sea or inland lake said, 'Oh yes, we have that bird. He sings at night.'"

Trochilus colubris. This is another bird which Mr. Bolles did not observe personally, but from the reports of the inhabitants he was positive of its occurrence.

Sayornis phœbe. "Pewees and small Flycatchers few and far between."

Poocætes gramineus.

Sylvania canadensis. A few in various parts of the island.

Gray-cheeked Thrush (*Turdus aliciæ* or *T. a. bicknelli?*) (Migrant?)

It may be well to note also the following species, not observed in the Bras d'Or region, but met with in other parts of the island:—

Cormorant (*Phalacrocorax carbo?*). One at Ingonish.

Merganser serrator. Indian Brook.

Totanus melanoleucus. North shore. (Doubtless migrants.)

Philohela minor. Indian Brook.

Loxia leucoptera. One at Ingonish.

Dendroica blackburniæ. One near Indian Brook.

Sitta canadensis. One heard at Margaree Forks.

The matter in parentheses above is mine, the rest Mr. Bolles's. In some cases I have quoted from his recent book 'From Blomidon to Smoky.' Considering the location of Cape Breton and the known habitats of these birds, it seems reasonable to conclude that they had all bred on the island, except where otherwise noted.— FRANCIS H. ALLEN, *West Roxbury, Mass.*

CORRESPONDENCE.

A Demand for English Names.

TO THE EDITORS OF 'THE AUK':—

Dear Sirs:— For a considerable period my mind has been wrought up over what I conceive to be a sin of omission on the part of our well beloved and sincerely admired American mammalogists and ornithologists. As to the deeds or misdeeds of the latter, I have personally not so much practical concern; but inasmuch as the mammalogists have no publication of their own, it is necessary to reach them through 'The Auk,' or not at all.

My grievance is found in the frequency with which new species of mammals and birds are described and turned loose upon the reading world with Latin names only. Whether this is due to indifference to the wants of unscientific readers, to disbelief in the value of popular names, or to the limitations of our mother tongue, I am unable to state. But, whatever the cause, in behalf of the unscientific public, I protest that it is time for a radical reform on this point amongst our investigators.

As an illustration of the alarming increase of the no-name series of mammals, let us take Mr. Walter E. Bryant's admirable list of 'Recent Additions to the North American Land Mammal Fauna' (Zoe, III, p. 201) which enumerates all the new species that were described from 1884 to 1892. Out of 155 species and subspecies absolutely new, 85 were launched upon the English-speaking world with no English names whatever, and with no names understandable to any but really good Latin scholars. In other words, the 85 new species have, to about 999 persons out of every 1000, practically no names whatever! Now, when considerably over one-half of the new species of our highest vertebrates are given to us (I mean the 999) practically nameless, it surely is time to protest.

Of the 85 nameless species referred to, a somewhat hurried count reveals the following list of shortcomers: Merriam is responsible for 58, J. A. Allen 8, — and a very, very few it is, considering the great number of new species described by him — Mearns 5, True 4, Chapman 4, Miller 2, and Shufeldt, Bryant, Stephens and H. Allen, 1 each.

From the above showing we may fairly estimate the number of additional christenings that are necessary amongst the 150 more new species (according to Dr. Allen's figures) that have been added to our fauna since the publication of Mr. Bryant's list.

Now as to the equities in the case. The technologist may say: "But we are not describing new species for the benefit of the ignorant and unscientific public; and the professional zoölogists of the world will find our nomenclature quite sufficient." Let us see about that.

In the first place, it is the money and the friendly interest of the unscientific public that alone enables science to breathe the breath of life, to eat, drink and have a being; for as yet the unscientific are rather in the majority. It is the Tom Joneses and Bill Smiths whose bank accounts "pay the freight" for Professor This and Doctor That; and are not the Joneses and the Smiths entitled to some consideration in the matter of published information regarding our own fauna?

If I can read signs aright, the gap between our really scientific zoölogists (speaking generally) and the unscientific public, is growing wider and wider, day by day. The trouble is simply that *the former publish so very little that the latter can understand!* Zoölogical knowledge is increasing tremendously — amongst the scientific few; but amongst the people generally, I believe it is decreasing frightfully, in spite of our museums. All of which, as the newspapers say, is "important if true."

And furthermore; in the naming *and the measuring* of an animal, *why* should 120,000,000 English speaking people ever be ignored? Latin names are only a sort of necessary evil anyway. Many of them are so long and overwhelming that if a man does not want to be laughed at, or accused of wanting to "show off," he must choose his hearers with care before using them. Tell a newspaper managing editor that you have got a *Taxidea americana neglecta*, and the chances are ten to one that he will

think it is some new kind of a tape-worm, and advise you to go and see a doctor right away. But if you wish to talk about that particular animal, you must use that name or none; for it seems as if the author and finisher of that new subspecies forgot to say whether it was a California Badger, or simply a Neglected Badger. Evidently the latter would now be the most appropriate name for it.

I complain because in the matter of nomenclature the general public does not always get a show at the thing described. I complain also, incidentally, because nearly all our investigators have decided that in the matter of measurements they will do precisely as the French and German naturalists desire, — discard English inches and hundredths thereof, and follow the French metric system only. It is a case of the tail wagging the dog. It would be just as fair to the 120,000,000 of English readers, — not more than about 1200 of whom care one rap for the metric system, — to go full length, and write descriptions in a foreign language also; for with both names and measurements in foreign form, the description itself is often quite worthless so far as ordinary mortals are concerned.

Standing as I do, outside the charmed circle, yet somewhat in touch with the general public, — which most of our scientific investigators unhappily *are not*, — I have been moved to state how these things strike a private in the ranks. It seems to me it is the imperative duty of every author who has ever given us a new species of mammal or bird without a good, distinctive English name, to confess his sins, and make good every such deficiency without loss of time. I would like to see the next number of 'The Auk' contain a full list of what is now lacking in mammalian names. Of course, any one sufficiently interested, whether a Latin scholar or not, can take a Latin dictionary, find out what a strange Latin name means, and then select an English equivalent to suit himself. But that is clearly inadmissible. The author of the species is the only proper person to select and bestow upon it an English name. If a fair amount of thought and *originality* is given to the selection of a popular name, the chances are that it will be sharply distinctive, easy to remember, and, in a vast majority of cases, just as useful to English-speaking naturalists as any machine-made Latin name.

Very respectfully,

W. T. Hornaday.

Buffalo, N. Y.,
Oct., 1894.

A Photograph of Audubon.

To the Editors of 'The Auk':—

Dear Sirs:—The interesting communication in the October (1894) number of 'The Auk' on 'The Last Portrait of Audubon,' brings to mind a picture of the celebrated naturalist which has been in my possession many years. It is a small photograph and was taken apparently from the daguerreotype referred to by Dr. Shufeldt and Miss Audubon. The face is exactly like the one reproduced in the magazine.

I purchased the picture from the Messrs. Anthony, the publishers, about 1863, as near as I can remember. On the back of the card is the following:—

"Published by
E. & H. T. ANTHONY,
501 Broadway,
New York.
E. A. [monogram]
from
Photographic Negative
in
Brady's
National Portrait Gallery."

A letter to E. & H. T. Anthony & Co., regarding this published portrait, brought the following reply under date Nov. 23, 1894: "We regret that we cannot trace the date of the photo., but all who were connected with that department have either left or died, and we have no means of finding the information you desire."

Very respectfully,

Jno. H. Sage.

Portland, Conn.,
Nov. 26, 1894.

NOTES AND NEWS.

PROF. J. W. P. JENKS, an Associate Member of the American Ornithologists' Union, died at Providence, R. I., September 26, 1894. Prof. Jenks was born at West Boylston, Mass., in 1819, and was graduated from Brown University in 1838. Immediately after his graduation he went to Georgia as a teacher, returning to Massachusetts in 1842, to become Principal of Pierce Academy at Middleboro. Prof. Jenks had the instincts of a naturalist and had ever been interested in natural history pursuits, but it was not until 1891 that he found opportunity to devote himself entirely to the study of nature. At that time he was called to Brown University to establish a museum of natural history, and to occupy the chair of agriculture. The remaining years of his life were closely identified with the museum which he founded. With characteristic energy he devoted all his time and no small share of his means to its development, and, almost single handed, brought within its walls by far the larger part of its collections.

Early in his life, acting under the advice of Prof. Jeffries Wyman, Prof. Jenks decided that his contributions to science could best be made in the shape of material for his associates to study, and few men have been more liberal or broad-minded in their earnest wish that their specimens should be placed where they would yield the best results. In this way he rendered important assistance to the late Professors Agassiz and Baird, the pages of whose works attest their indebtedness.

Prof. Jenks had all a naturalist's fine enthusiam; his love for his calling never waned, and at the time of his death he was as ardent in his plans for the future as a student on the threshhold of his career.

DR. EDUARD BALDAMUS, a Corresponding Member of the American Ornithologists' Union, died Oct. 30, 1893, in Wofenbüttel, Germany, at the age of 81 years and 6 months. This well-known ornithologist may be said to be one of the founders of German ornithology, having been an associate of Naumann, Brehm and Thienemann. Although from his earliest youth an ardent student of birds, he was by profession a teacher and clergyman. In 1849 he established the ornithological journal 'Naumannia,' which came to a close in 1858. This was apparently the earliest special journal devoted to ornithology, and was published as the organ of the German Ornithological Society, of which Dr. Baldamus was the founder and first secretary, this being likewise the first purely ornithological society ever organized. From 1860 to 1867 he was associated with Dr. Cabanis in the editorship of the 'Journal für Ornithologie.' In 1842 he began a series of ornithological explorations, which, during the next twenty-five years, extended from northern France and Italy to the islands of the North Sea, during which he formed his large oölogical collection, which has acquired world-wide fame. His writings have relation mainly to the life-histories

of European birds, and include the biological and oölogical portion of the supplement to 'Naumann's Vögel Deutschlands.' In 1876 he published an illustrated handbook of domestic fowls ('Illustrirte Handbuch der Federviehzucht'), and in 1882 appeared his 'Hausgeflügel.' His last work, 'Das Leben des Kuckucks,' was published only about a year before his death, in which work he gives the results of his many years' observations on the European Cuckoo. An extended history of the life and works of Dr. Baldamus is given in the September–October (1894) number of the 'Ornithologishes Jahrbuch,' by Dr. Rudolf Blasius, together with a list of his principal ornithological writings, numbering 160 titles.

Mr. D. G. Elliot is engaged in the preparation of a work on 'North American Shore-Birds,' to be published by Mr. Francis P. Harper of New York. The work will include the Limicolæ, or the Plovers and Shore-birds of North America, with a full page illustration of each species, and a short account of its life history. It will also include keys to families, genera and species and a glossary of the terms used in description, being intended as a popular handbook of this group of birds, so full of interest to sportsmen and bird lovers.

From Mr. P. L. Sclater's address as Chairman of the British Ornithologists' Club, at the opening of the 'third session' of the Club, we extract the following interesting information respecting the forthcoming volumes of the 'British Museum Catalogue of Birds.' He says: "From the last Parliamentary Report of the British Museum we learn that Vol. XXIV of this important work will contain the Waders, by Dr. Sharpe; Vol. XXV the Gulls and Petrels, by Mr. H. Saunders and Mr. Salvin; Vol. XXVI the Divers, Pelicans, Cormorants, and Herons, by Dr. Sharpe; and Vol. XXVII the Geese, Ducks, and the remainder of the Class of Birds, by Count Salvadori. Thus, as these naturalists are all, I believe, busily engaged on the compilation of their respective tasks, we may look forward to the completion of this arduous undertaking within a definite period — say, two or three years from the present time." Dr. Sclater suggests that there be a final index volume, giving references not only to the generic names, but to all of the specific names referred to in the twenty-seven volumes of the work. He further suggests that an additional volume be prepared "in which all the names of species described since 1874 (when the Catalogue was commenced), and not already recorded in the different volumes," be enrolled, with references to each of them. We trust both of these excellent suggestions will be carried out.

We have before us two claimants for notice in the rôle of new natural history journals, one of which is 'The Iowa Ornithologist, devoted to Ornithology and Oölogy,' published for the Iowa Ornithological Association. It is a quarterly magazine, the first number, bearing date October, 1894, consisting of 26 pages of very creditable matter. The proof-reading,

however, appears to have been left to the printer, if we are to judge by the frequent misspelling of scientific names. The leading article, on the Finches and Warblers of Iowa, contains much valuable information. The magazine is edited and published by David L. Savage, Salem, Iowa.

The other claimant for attention is 'The Museum,' "a journal devoted exclusively to research in Natural Science," published by Walter F. Webb, Albion, N. Y. This is a monthly, and the first number, of 32 pages, is dated November, 1894. It is only in part ornithological, although nearly one-half of the present number is devoted to that subject. Some of the articles, however, are unsigned, and we fail to find a table of contents, although a blank page of the cover might well have been taken for this purpose. We welcome these new-comers and wish them a full measure of prosperity.

WE HAVE just received 'The Birds of Eastern Pennsylvania and New Jersey,' prepared by Mr. Witmer Stone "under the direction of the Delaware Ornithological Club," and published by the Club. This important contribution to local ornithology, coming too late for formal notice in the present number of 'The Auk,' will be reviewed in a later issue of this journal.

We are also just in receipt of Part III (Moa-Sheathbill) of Professor Newton's 'Dictionary of Birds,' a most welcome continuation of this important work.

AT THE Twelfth Congress of the A. O. U. the Committee on Nomenclature, having in charge the preparation of a new edition of the Check-List of North American Birds, reported that the manuscript was practically ready for the press. The Council thereupon authorized its immediate publication, under the joint supervision of this Committee and the Committee on Publications. The work will probably be ready for distribution toward the end of the present year.

OWING to the absence of a quorum of the Committee on Nomenclature at the last Congress of the Union, and to the impracticability of calling the Committee together immediately thereafter, the publication of its report for 1894 is necessarily deferred till the April number of 'The Auk.'

MR. GEORGE K. CHERRIE, of the Field Columbian Museum, has just sailed for the Island of San Domingo, West Indies, where he will make an extended exploration of the ornithology of the island. The expedition is under the direction of Mr. C. B. Cory, Curator of Ornithology of the Columbian Museum, in continuation of his work on West Indian ornithology, which he has heretofore prosecuted with so much success.

IT MAY be of interest to know that Mr. William McIlwraith, of Rockhampton, Queensland, Australia, with others of a similar taste, is taking preliminary steps toward founding an 'Ornithologists' Union' in that distant land. We wish the new society every success.

THE A. O. U. 'Committee on Protection of North American Birds' made its usual report at the Twelfth Congress. The Chairman, Mr. Frank M. Chapman, read as a part of his report a communication from Mr. William Dutcher regarding the protection secured for the colony of Terns on Great Gull Island, New York, during the breeding season of 1894. In 1886 from 3000 to 4000 Terns were living on this island. It was found to be a common practice for persons to visit the island, shoot the birds, and take their eggs for various purposes, principally, however, for eating. Subsequently it was ascertained that the Terns were decreasing in numbers from year to year, and the necessity for protection became apparent if this colony of beautiful and harmless birds was not to be entirely destroyed. This had been the result elsewhere on the coast of Long Island. Through coöperation with several scientific and other societies of New York, and the United States Light House Board, a Special Game Protector was appointed who had charge of the island from May 15 to September 15. During that period numerous parties were prevented from collecting eggs and shooting birds. As a result of his efforts the estimated increase of the colony was from 1000 to 1500 birds, or at least one-half in numbers. Mr. Dutcher considered the statement correct, as large flocks of Terns had been seen on Long Island Sound as far west as Flushing Bay during the past season, none having been observed there before for a number of years.

Mr. Chapman also stated that Messrs. Wm. Brewster and Geo. H. Mackay were instrumental in saving from destruction the Terns on Muskeget Island, Mass. The efforts of these gentlemen prevented the threatened repeal of protective laws already in force.

The Committee was continued and, Mr. Chapman declining the Chairmanship, Mr. Gurdon Trumbull was made Chairman.

THE ACTION on the Amendments to the By-Laws of the A .O. U., proposed at the Eleventh Congress and referred to the Twelfth Congress, resulted as follows: The first proposed addition was not adopted. That part of the second amendment relating to elimination was adopted, but that portion consisting of the addition of the words "and voting" was rejected. The first paragraph of Article IV, Section 5, as amended, reads as follows: —

"*Article IV, Section 5.* Elections to Active Membership shall be held in the following manner: The number of Active Members to be elected shall be first decided by a majority vote of the Active Members present at the Stated Meeting at which the election is to be held. At each ballot each member present may vote for nominees not exceeding the full number of vacancies to be filled, and the person receiving the highest number of votes shall be declared elected, provided that he receive the votes of at least three-fourths of the members present, and so on until all the vacancies are filled."

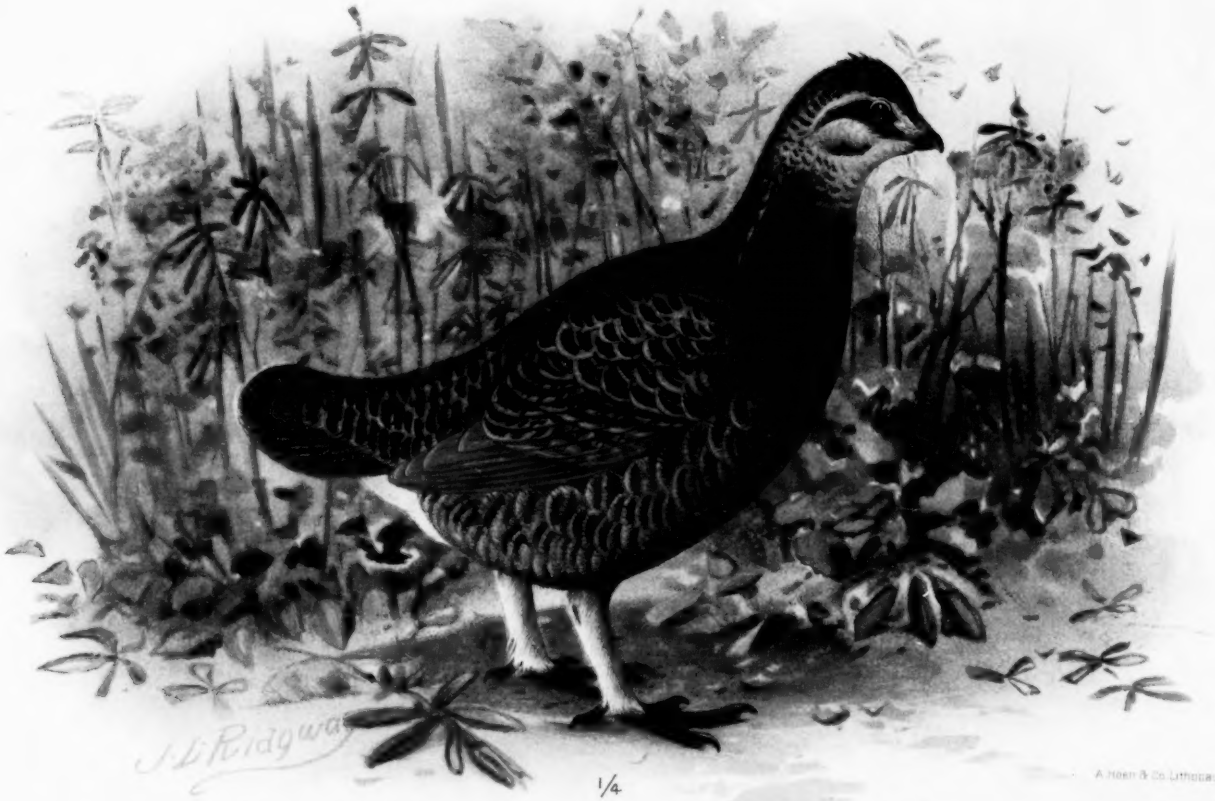
Rule XI of the By-Laws and Rules was amended to read as follows: —

"Rule XI. Nominations for membership must contain the full name, residence, official position if any, and date of nomination of the candidate, and must be signed by the member or members making the nomination. A suitable form of nomination shall be provided by the Secretary, and also printed lists of the names of candidates for Active Membership, to be voted for by the Australian ballot system."

FROM THE recently issued 'Report of the Ornithologist and Mammalogist' of the U. S. Department of Agriculture for 1893, by Dr. C. Hart Merriam, we learn something of the character of the work of this important bureau for that year. Like so many of the Government publications, it is belated news. With this Report Dr. Merriam brings out his 'Third Provisional Bio-geographic Map of North America,' modified in some essential details from the second, published about a year and a half previously. In speaking of the field work of 1893 Dr. Merriam says: "During the present year the biological survey of the Rocky Mountain region has been carried from Utah and Idaho completely across the State of Wyoming, thus connecting the work of the previous years in the Great Basin with the western part of the Great Plains. A large part of Wyoming was found to be from 1,000 to 3,000 feet lower than represented on the latest maps, and consequently to have a warmer summer climate and to belong to a more southern life zone than previously supposed. Thus the Wind River and Bighorn basins and the plains east of the Bighorn Mountains fall within the Upper Sonoran Zone instead of the Transition. . . . A special effort was made to determine the position of the boundary between the Upper Sonoran and Transition Zones in the States of Nebraska, North and South Dakota, and Montana. Further south, field work was carried on in Kansas, Colorado, and New Mexico; and further west, in California, Nevada, and western Oregon." Explorations were also continued on the tableland of Mexico.

The collection of data for the mapping of the distribution of species was also continued. While the methods of conducting this work are given in considerable detail, and its great economic importance is duly urged, we are given no definite information as to how far the work has been carried, or when the results will be made public.

In regard to the economic investigations respecting the habits of birds and mammals in their relation to agriculture, it is stated that the bulletin on the Crow, based on the examination of more than 900 stomachs of this bird, is about ready for publication, and that a similar bulletin relating to the Crow Blackbird is well under way. The report concludes with a short paper on the 'Food Habits of the Kingbird or Bee Martin,' by Mr. Walter B. Barrows, in which it is shown that very few Kingbirds catch honey bees, and that 90 per cent. of the bees thus caught are drones. On the other hand the Kingbird destroys large numbers of the so-called robber flies, which are very destructive enemies of the honey bee.



1/4

PRAIRIE HEN (TYMPANUCHUS AMERICANUS).
RED PHASE.